THE CHAUTAUQUAN

FEBRUARY, 1881.

A MONTHLY MAGAZINE DEVOTED TO THE PROMOTION OF TRUE CULTURE.
ORGAN OF THE CHAUTAUQUA LITERARY AND SCIENTIFIC CIRCLE.

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THEODORE L. FLOOD, A. M., Editor.

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REQUIRED READING.

HISTORY OF THE WORLD.

CHAPTER XXXV.

ARPHAXAD—HEBREWS, JOKTANID—ARABIANS.

Arphaxad, third son of Shem, (Gen. 10:22) gave name to the northern district of Assyria, called Arrapachitis, adjoining Media. The descendants of his son Salah, spread on the east side of the Tigris into the highlands of Media. Eber was the son of Salah, and the father of Peleg and Joktan. While Peleg was in the prime of life, the dispersion of the human family occurred. Joktan became the ancestor of thirteen ARABIAN tribes. Nahor, the great-grandson of Peleg, was the grandfather of Abraham; with whom the patriarch Shem was contemporary for more than a century. From Ur of the Chasdim, or Chaldees,—a place more probably represented by *Orfa* on the east, than by *Mugheir* on the west of the Euphrates,—Abram removed with his father Terah, and nephew Lot, the forefather of the MOABITES and AMMONITES to Haran (*Harran*) a locality now inhabited by a few Arabs and situated on a small branch of the Euphrates. There Terah died, and thence Abram was called by God to become an emigrant (*Hebrew*) to the land of Canaan, B. C. 1921. On his way thither he tarried awhile,—so tradition says—at Damascus, where he obtained "Eliezer, the steward of his house." Thence he entered the Promised Land, from which he was driven by famine into Egypt. There his faith in God failed, and he stooped to that mean form of deceit which makes the truth serve the purpose of falsehood. He called Sarai his sister, or niece, which she was, and left the king to infer that she was not his wife. (Gen. 12). The same offense was afterwards repeated at Gerar, (Gen. 20.) In 1913 he was blessed by Melchizedek, king of Salem,—supposed by some to be the patriarch Shem,—after the rout of Chedorlaomer and the recapture of Lot. In 1911 he became the father of Ishmael, to whose Egyptian mother the angel of the Lord said: "He will be a wild man, his hand will be against every man, and every man's hand against him; and he shall dwell in the presence [the face] of all his brethren,"—(Gen. 16:12) that is to the east of the other tribes sprung from Abraham. Those words most accurately describe the modern BEDOUIN ARABS, who are descended from Ishmael. In B. C. 1896 Isaac was born, and in B. C 1853, seven years after the death of Sarah, he married Keturah, by whom he had six sons, who became the fathers of the KETURAHITE ARABS, the MIDIANITES, &c., &c.

The same weakness that betrayed Abraham into sin, clung also to Isaac, (Gen. 26:7) whose son Esau intermarried with the Hittites, B. C. 1796, and became the ancestor of the EDOMITES or IDUMEANS, of whom the Herodian kings were the last and worst representatives. Jacob married the daughters of Laban, (Gen. 29) and founded the historic HEBREW nation, whose literature is the most ancient and valuable extant, and whose influence on the course and character of human events has been and is greater than that of all other peoples combined.

In B. C. 1715 Joseph was made vicegerent of Egypt, received his father at Goshen in B. C. 1706, and died in B. C. 1635. About B. C. 1600 the new Egyptian monarch that "knew not Joseph," reduced the Hebrews to abject slavery, which continued until the year of the Exodus, B. C. 1491. From that time until the death of Moses in B. C. 1451, the emancipated Israelites were wandering in the wilderness, and undergoing a course of instruction, discipline, and moral culture that was to fit them for the conquest of Canaan, and for settled agricultural pursuits. Than Moses, the world has known no greater man—except the Lord Jesus. Diplomatist, general, law-giver—his laws and institutions—or rather those given by God through him—have served as models to many nations. Their essential principles are applicable to the wants of mankind throughout all time. They were incorporated with the Anglo-Saxon code by Alfred the Great, with the simple laws of the Pilgrims in 1620; and have very much to do with the marvellous development, spread, and power of the Anglo-Saxon race.

From the *Giving of the Law* on Mount Sinai in B. C. 1491, to the establishment of monarchy in B. C. 1095, the Hebrews were under a *Theocracy*;—a form of government in which the policy of the nation was directed by the Divine Will, made known through authorized channels. The judges were only the lieutenants, or visible representatives of the ever present Eternal King; were called to office by Him, and usually wielded authority, local or national, for life. The nation continued unbroken under the monarchy from B. C. 1095 to B. C. 975. During this era the Israelites were the controlling race in Syria. Solomon's empire extended from Thapsacus, on the Euphrates, to Elath on the Red Sea, and the borders of Egypt. Numerous kings paid tribute to him. The king's trade was lucrative and his luxury unbounded. Jehovah's temple was built at Jerusalem, and a seraglio for Solomon was formed on the largest scale. The people were exhausted by taxes, and demoralized by the licentiousness of heathen worship. Revolution followed on the death of Solomon. The tribes of Judah and Benjamin adhered to his son Rehoboam; the other ten accepted the rule of the rebel, Jeroboam.

The kingdom of ISRAEL maintained distinct nationality under chequered fortunes from B. C. 975 to B. C. 721, when the majority of its remaining subjects were carried away captive by Sargon, king of Assyria, who "put them in Halah, and in Habor, (*district of the Lower Khabur*), by the river of Gozan, (*Upper Khabur*) and in the cities of the Medes." (2 Kings 18:11) The remnant left behind appear to have become the forefathers of the GALILEAN JEWS. What became of the captives is not certainly known. Some of their descendants returned to Palestine in the days of Ezra and Nehemiah; others retained their nationality in the midst of

their neighbors; and others doubtless blended with them. Speculation has gone wild on the subject. Probabilities alone must content us.

The kingdom of JUDAH lasted from B. C. 975 to B. C. 586, when Nebuchadnezzar destroyed Jerusalem, and led Zedekiah and the most of the Jewish nation into captivity at Babylon. The remnant that was left afterwards migrated into Egypt.

Forty-eight years after the fall of Judea, Babylon itself was captured by Cyrus, who in B. C. 536 gave permission to the captives to reëstablish themselves in their own land. A colony of 42,360 persons with their servants, under the lead of Zerubbabel, set out and settled in or near Jerusalem. Another colony followed under Ezra in B. C. 457, and another under Nehemiah in B. C. 445. Smaller streams also flowed in at intervals to the father-land, but probably half the captives remained in Babylonia and contiguous countries. The mixed people, called SAMARITANS, who held the centre of the old land of Israel, resented the proper religious exclusiveness of the Jews, and thereafter cherished an animosity that its objects only too thoroughly reciprocated. The temple was rebuilt in B. C. 515. The returned as well as the unreturned exiles owed their preservation from general massacre about B. C. 510 (Rawlinson B. C. 473,) to the beautiful Jewess Esther, who was the wife of Ahasuerus, the Persian king. Haman (*Omanes?*) his prime minister, had planned the horrible crime. The guilt was brought home to him, and he and his accomplices suffered death. Prof. Rawlinson, on the strength of "notes of time, character, and name," identifies this "Ahasuerus" with Xerxes.

From the time of Nehemiah to that of the Maccabees the Jews were ruled religiously and politically by the High Priests. Of these, Jaddua surrendered Jerusalem to Alexander the Great, after the fall of Tyre. From B. C. 320 to B. C. 203, Judea was subject to Egypt under the Ptolemies. From B. C. 203 to B. C. 168 it was under the power of the Syrian kings, of whom Seleucus and Antiochus Epiphanes were sacrilegious and plundering tyrants. The profanation of the temple by the latter, who set up an idol altar therein, led to national uprising under the Maccabees in B. C. 168, and the gradual establishment of independence. Simon, the fourth Asmonæan or Maccabean ruler, was practically king of the Jews. John Hyrcanus, his son, bore that title, as did his successors, until Antigonus, the last of them, gave place to Herod, B. C. 37. Under Hyrcanus and his immediate successors, Samaria and Idumea were conquered, and Judea was as powerful as Syria. But the religious sects of the Pharisees and Sadducees transformed themselves into political factions, and engaged in civil wars, which weakened the country, and left it an easy prey to the Romans, under Pompey, in B. C. 63. The refusal of the bigoted Jews to fight on the Sabbath, it is said, gave him possession of Jerusalem.

The rule of the Herods lasted from B. C. 37 to A. D. 44, and was never acceptable to the people, because of their Idumean descent, horrible cruelty, and alliance with foreign oppressors. The first of them, called Herod the Great, in his jealousy and fear, caused the "slaughter of the innocents" in and around Bethlehem,—hoping to include that KING OF KINGS, "of the increase of whose government and peace there shall be no end." Herod Agrippa, the last of them, and a persecutor of the Christians, died A. D. 44. Judea was then placed under Roman Procurators. These were intolerable tyrants, and especially Gessius Florus, under whom the Jewish revolt broke out in A. D. 66. Josephus gives full details of the desperate and frenzied struggle that followed. Cestius Gallus was completely routed by the Jews at Scopas. When Titus invested Jerusalem, it was crowded by strangers and pilgrims to the Passover. Josephus states that 1,100,000 perished during the siege. Like infuriated wild beasts they fought with each other, and only suspended their murderous strife to resist or assail the common enemy, with dauntless and savage bravery. Famine weakened them, and delicate mothers are said to have eaten their own children in the extremities of hunger. Pestilence aided to thin their numbers. When the city was finally stormed, A. D. 70, the aged and infirm Jews were killed, the children under seventeen sold as slaves, and the rest were sent, "some to the Egyptian mines, some to the provincial amphitheatres, and some to grace the triumph of the conqueror." Among the latter were John of Giscala, and Simon Bar-Gioras, the Zealot leaders. The work of demolishing the city was then committed to the tenth legion. Josephus assures his readers that "the whole was so thoroughly levelled and dug up, that no one visiting it would believe that it had ever been inhabited." What a commentary on our Lord's predictions. (Mark 13:2, Luke 13:35, 19:43,44, 21:23, 24.)

SYNCHRONOLOGY B. C. 538–135.

PERSIANS.	JEWS.	ROMANS.	GREEKS.	CARTHAGINIANS
Cyrus takes Babylon, 538.	Seventy years captivity ends, 536.	Tarquinius Superbus, king, 534.	Democracy established at Athens, 510.	Build Cadiz in Spain, 530.
Datis and Artaphernes invade Greece, 490.	Foundation of temple laid, 534.	Cincinnatus, dictator, 456.	Æschylus, Pindar, Aristides, Zeuxis, *cir.* 480.	Hamilcar killed in battle, 480.
Persians defeated at Platæa and Mycale, 479.	Ahasuerus marries Esther, 458.	Laws of the twelve tables collected and published, 451.	Splendid administration of Pericles, 440.	Carthaginians trade with Britain for tin, 460.
Assassination of Darius, 330.	Haman hung, and the Feast of Purim instituted 452.	The 300 Fabii killed at Cremera, 477.	Simonides of Cos obtains an Olympian prize for a system of assisting the memory, 477.	Invade Sicily, 409.
Persia obtains the sovereignty of the Greeks in Asia, 387.	Submit to Alexander the Great, 332.	Silver coinage begun, 269.	Cynic philosophy arises, 396.	Land in Italy, 379.
	Jonathan Maccabeus, the chosen national chief and high-priest, 161.	First divorce known at Rome, 231.		Besiege Syracuse, 310.
	John Hyrcanus, king, 135.			Put the Roman Regulus to a cruel death, 349.
				Hannibal defeats the Romans at Cannæ, 216.

JOKTANID ARABIANS.

Joktan was the father of thirteen Arabian tribes whose founders are named in Gen. 10:26–30. Their settlements cannot be traced with precision. The modern Arabs call Joktan by the name of *Kahtan*, and say he colonized Semen, including the city of Mecca. The principal seat of Joktanite power was in the southwest of Arabia. There they established the kingdom of Sheba, which abounded in gold, frankincense, spices, and precious stones; and whose queen, whom they call *Balkis*, went to the court of Solomon to hear his "wisdom." (1 Kings 10:1-13). It was succeeded by the kingdom of Himyar, of whose language much knowledge may be gathered from remaining inscriptions. Its great cities were Seba San'a, (*Uzal*), and Zafar, (*Sephar*). The Joktanites also settled the Hedjaz, and spread as far north as Damascus. Never conquered by invaders, the Arabs have sent out colonies and conquerors, known as Saracens. They have been great traders and great plunderers, (Job 6:19,) and are so still. Their vast peninsula includes enormous salt and sand plains, swept by fierce winds, and especially by the burning, suffocating *simoom*. The mirage too, or the appearance of water, created by the tremulous waving vapors raised by the heat of the meridian sun, is of common occurrence. The Israelites on the way from Egypt to Canaan suffered much in the "great and terrible wilderness" from the hostility of the wandering tribes. The central and southern portions of the country have some well-watered, well-peopled districts.

The religion of the ancient Arab tribes was Tsabaism, or worship of the heavenly bodies. Their language is the richest and most developed of all the Semitic tongues. Their mode of life, food, dress, dwelling, manners, customs, and government, have always continued unalterably the same, and clearly explain many allusions in the Scriptures. Phy-

sical and mental characteristics are strongly marked, and rank so high that Baron Larrey, Surgeon-General of Napoleon's army in Egypt, regarded them as furnishing the *prototype*—the primitive model form—the standard figure of the human species. Some others agree with him. He found "their physical structure in all respects more perfect than that of Europeans; their organs of sense exquisitely acute; their size above the average of men in general; their figure robust and elegant; (the color brown); their intelligence proportionate to that physical perfection, and, without doubt, superior, other things being equal, to that of other nations."

CHAPTER XXXVI.

LYDIANS.

Lud, the fourth son of Shem, (Gen. 10:22) was the father of the Lydians, who conquered and probably blended with the Mæonians, on the west coast of Asia Minor. The Lydians were brave, warlike, and renowned as cavalry. Sardis, the modern *Sart* was their capital. Their language was Semitic. Three dynasties governed them from B. C. 1183 to B. C. 548, when they were conquered by Cyrus. The conquest itself was regarded as a punishment for the murder of Candaules, the last king of the second dynasty, who insisted that his friend Gyges should witness the unclothed beauty of his queen. Her outraged modesty resented the insult, and with the aid of Gyges avenged it by slaying the king. Gyges succeeded him, both as husband and monarch.

The refusal of king Alyattes to give up the Scythian murderers of a Median boy occasioned war with Cyaxares the Mede. A battle between the two armies was ended by an eclipse of the sun, foretold by the philosopher Thales, and peace was concluded between the belligerents. In B. C. 558 Crœsus ascended the Lydian throne, at the age of 35, and soon subdued all the nations in Asia Minor, west of the river Halys, except the powerful and prosperous LYCIANS and the Cilicians. He is represented by Herodotus as a tender parent, faithful friend, and beneficent man. Magnanimous, liberal, and hospitable, he was also no less religious than wise. When he asked the Greek Solon, who was visiting at his court, whom he deemed the happiest of men, and expected the reply that he himself was the most happy, the sage responded:—"I have no answer to give, until I hear that thou hast closed thy life happily. * * * He who unites the greatest number of advantages, and retaining them to the day of his death, then dies peaceably, that man alone, sire, is, in my judgment, entitled to bear the name of 'happy'—for oftentimes God gives men a gleam of happiness, and then plunges them into ruin."

Solon departed, and not long afterwards Atys, the heir of Crœsus, was accidentally killed while hunting a wild boar. The grief of the father was intense, and he mourned for his son two years. Then he found diversion in an attempt to check the growing power of Persia, under Cyrus. But before he engaged in the enterprise he wished to foreknow the issue, and sent messengers to inquire of the Pythoness at Delphi, who professed to reveal future events, what he was doing at that very hour. She replied, in effect, that he was boiling a lamb and a tortoise together in a brass caldron. He was doing that very unlikely thing. "The oracle at Delphi is a true one" was his conclusion; "for I did what I supposed no mortal could know, to test its pretensions." He may have told one of his messengers what he should be doing, and that messenger may have told the priestess. In whatever way she knew it—whether from an unfaithful messenger, or from an evil spirit—her guess was correct. Crœsus then loaded the oracle at Delphi with rich presents, —hoping for a favorable reply to the questions whether he should go to war with Persia, and also seek allies. The answer was that if he attacked Persia, he would destroy a mighty empire, and that he should seek to make the Greeks his allies. Next he inquired, "Whether his kingdom would be of long duration?" The Pythoness replied:—"Wait till the time shall come when a mule is monarch of Media." The answer pleased him, for he thought it impossible that a mule should be king of the Medes, and that his kingdom would last perpetually. In this mood he scorned the advice of the wise Sandœnis, who warned him to let the poor and leather-clothed Persians alone. Crossing the Halys into Cappadocia, he committed some dreadful ravages, and soon found himself face to face with Cyrus and the Persian army at Pteria. The "mule" Cyrus,—son of a Persian father and a Median mother—defeated him utterly, and followed him to Sardis. Fearing the Lydian cavalry, Cyrus put his camels into his front rank. Their bad smell made the Lydian horses turn tail and gallop off,—leaving the victory with the camels. Crœsus, cooped up in Sardis, soon found that he had destroyed a mighty empire; but, alas! that empire was his own. The lying oracle had deceived him. Sardis was taken by storm. A Persian soldier would have killed him in his voiceless despair, had not his deaf and dumb son, in an agony of fear and grief, called out—"Man, do not kill Crœsus." Herodotus says that this was the first time his son ever spoke, and that he retained the power of speech for the remainder of his life. Cyrus then placed the captive king, with fourteen Lydians, on a vast pile, intending to burn him alive. The hapless man, in the depth of his woe, remembered the warning of Solon:—"No one while he lives is happy," and thrice uttered his name. Cyrus heard the sounds, and bade the interpreters ask who it was he called on. When the conqueror learned the story of Solon's visit, he felt afraid of retribution, and bade them save Crœsus from the flames. The two became fast friends. Crœsus obtained permission to send his fetters to the Delphic oracle, which he accused of deceit. The priestess of Apollo replied that he had no right to complain, and that if he had been wise he would have inquired whose empire would be overthrown—his own or that of Cyrus. Crœsus was none the less effectually ruined, and Lydia became part of the empire of Persia. Crœsus accompanied Cyrus as his confidential adviser, and subsequently filled the same office to his son Cambyses.

The Lydians remained subject to the Persian empire until its subversion by Alexander the Great, and afterwards shared similar fortunes to those of the other nations of Asia Minor.

SYNCHRONOLOGY (S. HAWES) B. C. 562–521.

LYDIA.	PERSIA.	ROME.	GREECE.	BABYLON.
Solon and Æsop visit the court of Crœsus, the king, 562. Sardis is stormed, and Crœsus captured by Cyrus, 548. Crœsus dies about 521.	Empire of Persia founded by Cyrus the Great, 559. Besieges Belshazzar in Babylon, 541. Cyrus dies, 529.	First comedy acted on a cart, by Susarion and Dolon, 562. CHINA. Confucius flourishes, 521. JUDEA. Samaritans oppose the building of the Temple, 521.	Dials invented by Anaximander of Miletus, 562. Temple of Apollo at Delphi burnt by the Pisistratidæ, 549. Corinthian order of architecture invented, 540. Age of Pythagoras, Anacreon and Simonides, 539.	Nebuchadnezzar recovers his reason and adores Jehovah, 561. Evil-Merodach slain, 554. Belshazzar ascends the throne 555. His licentious feast and death, 538.

CHAPTER XXXVII.

ARAMEANS, SYRIANS.

Aram, youngest son of Shem, (Gen. 10:22,) was the ancestor of the Aramean tribes, who settled in the country northward from Palestine and the northern Arab tribes to the

Taurus Mountains, westward to the Mediterranean, and eastward to the Tigris. Its chief divisions were Aram-Dammesek, or "Syria of Damascus," Aram-Zobah, or "Syria of Zobah," Aram-Naharaim, "Mesopotamia," (the upper portions of it) or "Syria of the Two Rivers," and "Padan-Aram," "the plain Syria," or the plain at the foot of the mountains.

Included in this region was Uz, the land of the patient patriarch Job, between Idumea and the Euphrates, in Arabia Deserta. Its monarchical government is alluded to in Jer. 25:20, and the habits of the people are described in the early portions of the exquisitely beautiful book which bears the name of Job. HUL, the second son of Aram, may have given his name to the *Huleh*, a fertile district near the sources of the Jordan. GETHER, the third son of Aram, is by some identified with Geshur, founder of a kingdom on the right bank of the Orontes, whither Absalom fled after the murder of Amnon. MASH, the fourth son of Aram, is supposed to have left a memento of his name in Mount Masius, which extends from the Tigris to the Euphrates, and from which emigrants went out to MYSIA in Asia Minor. There, too, some of his descendants may probably be found among the Kurds and Nestorian Christians.

The Syriac and Chaldee languages were dialects of the Aramaic, and slightly differed from the Hebrew, the later forms of which they modified. The religion of the Aramean nations consisted in the worship of the powers of nature, and degenerated into gross idolatry. Lebanon, Hermon, and other celebrated mountains, beautified their territory, much of which was a vast sandy desert. The splendid city of Tadmor, or Palmyra,—as it was called in the days of its greatest fame,—was built by Solomon on a fertile oasis in the Syrian desert, about 120 miles east of Damascus, and about the same distance from the Euphrates. That district fell into the hands of David after his wars with Hadadezer, king of Zobah. (2 Samuel 8:3, 4.) The ancient and marvellously beautiful city of Damascus was conquered by him about the same time. It regained independence under Rezon. (1 Kings, 11:23-25) *Cir.* B. C. 984.

Broken up into petty tribes and weak nations, the Arameans were successively in subjection to the Assyrians, Babylonians, Persians, and Macedonians. On the division of Alexander's empire among his chief generals, Mesopotamia and Syria fell to the lot of Seleucus Nicator, B. C. 321, who made Antioch, on the Orontes, the capital of his realm, and by far the most splendid of all the cities of the east. All-conquering Rome finally took possession of it, as also of Damascus, in A. D. 54, and at a later period of Palmyra.

CHAPTER XXXVIII.

BABYLONIANS.

The empire of the Babylonians had for its nucleus the ancient kingdom of Chaldea, (*see Chapter XXVII*), which was conquered by the Assyrians about B. C. 1250. Independence was regained under Nabonassar in B. C. 747, and lost once more under Merodach-baladan, who sent an embassy to Hezekiah (2 Kings, 20:12) in B. C. 713. Revolts followed, but Esar-haddon conquered Babylon, built a palace there, and reigned alternately at Nineveh and Babylon. The Babylonians and Medo-Persians under Cyaxares were united in the siege and destruction of Nineveh, about B. C. 625, and divided the Assyrian dominions between them. Susiana, the Euphrates valley, Syria, Phœnicia and Palestine fell to the lot of Nabopolassar, the Babylonian king. Pharaoh-Necho, the Egyptian, overran the western provinces in B. C. 608, and Nebuchadnezzar was sent to retake them. He destroyed Jerusalem, B. C. 586, captured Tyre, (or a portion of it,) B. C. 585, and was acknowledged as the paramount lord of Egypt about B. C. 569. Babylon was then one of the great sovereignties of the world. Nebuchadnezzar built the walls of Babylon, rebuilt the temple of Bel, and constructed a new palace, in the grounds of which he raised the celebrated "hanging gardens," which were reckoned one of the "seven wonders of the world," for the pleasure of his Median wife, Amuhla (*Amytis*) who pined for her native mountains. They covered three and a half acres, and rested in a brick structure "four hundred feet high, which, when finished, resembled a mountain covered with trees and adorned with flowers. The whole consisted of a series of terraces" rising from the river to the summit. Vast, hollow piers of brick were raised to give room for the roots of the trees. "The soil of the whole garden was kept moist by means of a machine, placed on the highest terrace, which drew up the water from the Euphrates, and distributed it by means of small conduits to all parts of each successive terrace." (*J. P. Newman's Babylon and Nineveh, pp.* 139,140.) Nine-tenths of the bricks in the ruins of Babylon are said to be stamped with Nebuchadnezzar's name, and confirm the truth of his proud boast—"Is not this great Babylon *which I have built?*"

His architectural undertakings were not confined to the metropolis, but included other cities, in which he built or repaired temples, constructed quays, reservoirs, canals, and aqueducts on the grandest scale. His irrigation works made the desert "rejoice and blossom as the rose." Daniel records his splendor, power, and arrogant ferocity. The latter toward the close of life, received a severe rebuke. He became insane, imagined himself to be a beast, and quitting the haunts of men, insisted on leading the life of a beast. (Daniel 4:33.) The strange delusion seems to have lasted from four to seven years. Then he said, "mine understanding returned to me and I blessed the Most High. I was established in my kingdom, and excellent majesty was added unto me." (Daniel 4:31-37.)

Nitocris, probably the wife of Neriglassar, B. C. 559-555, is reported by Herodotus (vol. i. p. 250,) to have digged a vast lake above Babylon, into which she turned the Euphrates. She then bricked the banks of the river within the city, and built a bridge across it, "near the middle of the town." When the works were completed, the river was again turned into its natural channel. The defensive works begun by her were carried on by Nabonadius, who is supposed to have been her second husband, and the father of her dissolute son Belshazzar. Nabonadius allied himself with Crœsus of Lydia, B. C. 555, and thereby brought upon himself the attack of the conqueror Cyrus. When the Babylonians were defeated in an engagement outside the city, they shut themselves up within its walls, "and made light of his siege, having laid in a store of provisions for many years, in preparation against this attack." But Cyrus was equal to the emergency. Placing a body of picked troops at the point where the Euphrates entered the city, and another at the point where it issued from it, with the remainder of his army he turned the river into the basin of Nitocris. The waters fell and the picked soldiers entered the channel, found the river gates open, surprised Belshazzar and his profligate courtiers at their impious feast, and captured the city, about B. C. 538. Thus fell Babylon, and thus were fulfilled the predictions of the Hebrew prophets.

The Babylonians were of mixed blood, but of purely Semitic speech. Their great capital was emphatically a "city of merchants." Addicted to the study of astronomy, they mapped out the sky into constellations, catalogued the fixed stars, noted the occultations of the planets by the sun and moon, and accurately measured time by means of sun-dials. Astrology was also studied, as the heavenly bodies were supposed to influence the character and portend the destinies of men. Their government was a pure despotism; their

religion the worship of the sun, moon, stars, and deified heroes; their worship a gross and debasing idolatry. Drunkenness was common, and the worst sensual appetites were freely indulged. Once in her life-time, each woman was compelled to "consort with a stranger" in honor of the goddess Beltis. Even the heathen Herodotus denounced this "most shameful custom." Another "custom" which he praises as one of "the wisest" appears to be quite the contrary in Christian eyes. It was that of collecting all the marriageable maidens in each place once a year. The most beautiful were then sold by a herald for wives to the highest bidders. The money thus obtained was then used as a fund to marry off the plain and crippled, who were sold for wives to those who would take them at the smallest sum.

Proud, covetous, luxurious, cruel, and abominably licentious, the Babylonians were ripe for destruction. Their honesty was that of policy, their "calmness" that of treachery. Against Darius they rebelled, and made ready for a siege. "Having first set apart their mothers, each man chose besides out of his whole household one woman, whomsoever he pleased; these alone were allowed to live, while all the rest were brought to one place and strangled. The women chosen were kept to make bread for the men; the others were strangled that they might not consume the stores." (Herodotus, Vol. ii, p. 438.) For a year and seven months Darius besieged the city, only to be jeered by the insulting Babylonians. At last it was entered by means of the treacherous stratagem of Zopyrus, the wall was destroyed, the gates torn down, and nearly three thousand of the citizens crucified, B. C. 500. Xerxes afterwards plundered and overthrew the temple of Belus. Rapid decay followed, and, in the days of Strabo and Diodorus Siculus, the place lay in ruins. The doom of Babylon, pronounced by Isaiah (13:19-22,) has long since been executed.

SYNCHRONOLOGY, B. C. 625-538.

BABYLON.	EGYPT.	GREECE.	JUDEA.	PERSIA.
Nebuchadnezzar sole king, 605.	Red Sea canal begun, 610.	Solon, Seven Sages living, 604.	Daniel led captive, 606.	Cyrus born, 599.
Besieges Tyre for 13 years, 585.	King Apries strangled, 571.	Thales teaches the spherical form of the earth and the true cause of lunar eclipses, 600.	Jerusalem taken, 588.	Joins Cyaxares the Mede, against Babylon, 559.
Sets up the golden image, 583.	Intimate connection with Greece, 569.	Pythian games at Delphi, 591.	Daniel's visions, 555, 553.	Slays two Babylonian kings in battle, 556.
Becomes insane, 569. Dies 561.	Said to have 20,000 inhabited cities, 568.		Interprets the hand-writing on the wall, 538.	Conquers Lydia, 548.
Neriglassar slain in battle, 556.				Subdues a great part of Asia, 548-541.

CHAPTER XXXIX.

THE PERSIANS.

We have already stated in Chapter X that the Medes passed under the supremacy of the Persians through the agency of Cyrus the Great. Thenceforward the history of the two kindred peoples is practically that of the Persians. The empire of the latter lasted from the accession of Cyrus, B. C. 558, to its conquest by Alexander, B. C. 330.

The Persians were an Aryan people, whose refluent emigration was westward into Armenia, then south along the Zagros mountains, and finally southeast into Persia. The nation was composed of an agricultural and trading class, settled in towns and villages, and of a nomadic or pastoral class. The latter was divided into four tribes, of which the Pasargadæ monopolized nearly all the offices, both civil and military. The royal family belonged to it. Cyrus professed a purer faith than that of the Medes, and therefore regarded the Jews, who worshipped but one God, with special favor. The civilization of the Medes was adopted by the conquering Persians, letters were employed in inscriptions on public monuments, but no general system of administering the affairs of the empire was devised. Most of the countries under it were mainly tributaries.

The religion of the Persians was that of Zoroaster, and was contained in the *Avesta-Zend*, that is, *Text and Comment*, or *Law and Reform*. It claims to be the revelation of "universal knowledge" made by "the excellent Word, the pure and active," through Zoroaster, to all mankind, as "the good law." It reveals Ormuzd as the supreme being; spiritual, self-existent, uncreated, and eternal; of a nature essentially good; the creator, preserver, and governor of the universe, and the proper object of adoration. It speaks of his creative work by means of "the Creative Word which existed before all things." It ascribes to Ahriman, the "evil spirit," the authorship of all moral and material evil, and of death itself. It describes the temptation and fall of man, and teaches the doctrine of future rewards and punishments. In it is the original of Mohammed's famous "way extended over the middle of hell, which is sharper than a sword, and finer than a hair, over which all must pass," and from which the wicked fall into the dark and terrible gulf below. It also taught the resurrection of the body. The Avesta-Zend contains the least corrupted body of primitive revelations now extant, except the Holy Bible. The morality it taught was simple and pure, practical and spiritual.

Cyrus subjected the Asiatic Greeks, conquered the remote East, captured Babylon, and was at last slain in an expedition against the Massagetæ, on his northeastern frontier. Active, brave, energetic, and fertile in stratagems as he was, he was overpowered and slain, according to Herodotus, (Vol. i, p. 222,) by Tomyris, the queen of the barbarians, whose son he had captured, and who had threatened to give him his full of blood. Search was made among the slain, by order of the queen, for the body of Cyrus; and when it was found she took a skin, and, filling it full of human blood, she dipped the head of Cyrus in the gore, saying, as she thus insulted the corse, "I live and have conquered thee in fight, and yet by thee am I ruined, for thou tookest my son with guile; but thus I make good my threat, and give thee thy fill of blood." She talked and acted like a modern Turcoman or Uzbek. The body of Cyrus was subsequently placed in a tomb at the city of Pasargadæ, which bore this inscription:—"*I am Cyrus*, the son of Cambyses, who founded the empire of the Persians, and ruled over Asia. Grudge me not then this monument."

Cambyses, son and successor of Cyrus, invaded Africa, conquered Egypt, B. C. 525, and acquired the detestation of every one on account of his capricious cruelty. In answer to one of his questions, the royal judges gave an opinion that Herodotus calls "at once true and safe—they did not find any law allowing a brother to take his sister to wife, but they found a law that the king of the Persians might do whatever he pleased." It pleased him to do many singular things, such as wounding the sacred bull Apis, that he might "find out whether *a tame god* had come to dwell in Egypt," and shooting the son of the courtier Prexaspes through the heart, in order to convince that nobleman of his sobriety. No one regretted the madman's suicide in B. C. 522. The best feature in his character was his care for the purity of the royal judges. One of them, named Sisamnes, had taken money to give an unrighteous sentence; whereupon Cambyses slew and flayed him, and cutting his skin into strips, stretched them across the seat of his judicial chair. This done Cambyses appointed the son of Sisamnes to be judge in his father's room, and bade him never forget *in what way his seat was cushioned.* (Herodotus, Vol. iii, p. 192.

A Magus named Gomates, who claimed to be Smerdis,

the other and deceased son of Cyrus, had siezed the throne in the absence of Cambyses, but was detected by his want of ears by one of the late king's wives. The imposter had lost them in punishment of some crime committed in the reign of Cyrus. He was slain after a reign of eight months.

Darius I, greatest of the Persian monarchs, ascended the throne in January, B. C. 521. He divided the empire into twenty governments or satrapies, maintained a standing army, built post-roads, attached secretaries as "King's Eyes" and "Ears" to the courts of the satraps, to report to him all that was going on, and coined money. The standing army was composed mainly of Persians; the navy was drawn from conquered nations. He invaded India, passed into and out of Scythia, subjugated Macedonia, was routed by the Greeks at Marathon, and died in B. C. 486. Xerxes succeeded him, invaded Greece, was beaten at Thermopylæ, Salamis, Platæa, and driven out of Greece in disgrace. He retired to his palace at Susa, where his life and surroundings are best pictured in the *Book of Esther*. His vile and baneful life was closed by assassination, B. C. 465.

Artaxerxes I, "the long-handed," succeeded. He was mild, weak, perfidious, and cruel. He suppressed the revolted Egyptians under Inarus, destroyed the Athenian fleet, B. C. 455, lost his own at Salamis, B. C. 449, weakened the empire by his cruelty, his acceptance of terms dictated by Megabyzus, the revolted satrap of Syria, and his indulgence of the cruel, sensual wickedness of his mother and sister. The key-stone of the Persian arch was crumbling into fragments, and the whole edifice began to totter to its fall. He died B. C. 425. The brief reigns of Xerxes II and Sogdianus followed, and Darius Nothus ascended the throne in B. C. 424. He married his aunt Parysatis, daughter of Xerxes I, who, by her abandoned life and cruelty deserved the title of "the she-wolf of Persia." She was the real monarch. Corruption instead of force, lying instead of truth, deceit instead of honesty, became the prevailing instruments of government. A few able satraps upheld the perishing empire, and even gained some successes. The Spartans, B. C. 412, expressly ceded *all Asia* to the king.

Artaxerxes II, called *Mnemon* for his excellent memory, mounted the throne, B. C. 405, in opposition to the wishes of his mother Parysatis, who desired it for her younger son Cyrus. She encouraged the latter to rebel, helped to raise Greek mercenaries, and mourned his death at the battle of Cunaxa, in September, B. C. 401. The retreat of the ten thousand Greeks under Xenophon is graphically narrated in his immortal book, the *Anabasis*. Parysatis avenged herself by poisoning Statira, the fondly beloved wife of Artaxerxes; then promoted an incestuous marriage between himself and his daughter Atossa, and thus prepared the way for further treasons, executions, and assassinations. Artaxerxes was an exaggerated Mormon. The unwise quarrels of the Greeks made him the authoritative arbiter between them by the peace of Antalcidas, B. C. 387. But his power was more apparent than real, and the Persian empire continued to decline. Artaxerxes III, or Ochus, followed his father in B. C. 350. He was able and cruel, secured himself in the throne—like a modern Turk—by putting all the other near members of the royal family to death. Aided by Greek mercenaries, he recovered Egypt, but was so fierce and violent that the eunuch Bagoas, his chief minister, assassinated him, B. C. 338—next destroyed the seed royal, and finally conferred the crown upon his friend, Codomannus. No sooner did the latter stand on the pinnacle of power, under the title of Darius III, than he kicked down the ladder by which he had mounted to that perilous eminence, by putting the wretch Bagoas to death, B. C. 336.

Darius III, last king of Persia, had received the satrapy of Armenia from Ochus as his reward for killing a gigantic Cadusian (*Kurd*) in single combat. Tall, handsome, amiable, just—he was too good for the worthless court he was called to govern, and too weak to grapple with the difficulties of his position. He despised Alexander's youth and inexperience, and made his defensive preparations too tardily. "Behold, a *he-goat came from the west* on the face of the whole earth, and touched not the ground"—symbolizing the young Macedonian, and the swiftness of his conquest—"and he came to the ram that had two horns, which I had seen standing before the river, and ran unto him in the fury of his power. And I saw him come close unto the ram, and he was moved with choler against him, and smote the ram, and brake his two horns; *and there was no power in the ram to stand before him, but he cast him down to the ground and stamped upon him*; and there was none that could deliver the ram out of his hand."

This prophetic vision, seen and recorded by Daniel, (8:5-7) in B. C. 553, was realized in the overthrow of Darius at the battle of the Granicus, B. C. 334; in the battle of Issus, B. C. 333; and in the final and decisive battle of Arbela, Oct. 1st, B. C. 331, where the Persian empire came to an end. The Macedonians, under Alexander, who "led them as a boat cuts through the waves, or an eagle cleaves the air" were now triumphant in Asia. Darius, bound with golden chains, was led captive by his treacherous satraps in Hyrcania, and there murdered. Alexander arrived on the spot while the body was yet warm, and with dignity and grace threw his own cloak over the bleeding corpse.

SYNCHRONOLOGY, B. C. 558-330.

PERSIA.	MACEDONIA.	GREECE.	JUDEA.	ROME.
Cyrus consolidates the empires of the Medes, Persians and Babylonians in that of the Persians, which lasted 206 years, 537.	Amyntas I, 547.	Pythagoras in Egypt, 536.	Samaritans bribe the courtiers of Cyrus, and obstruct the building of the temple in 533.	Brutus and Collatinus, consuls, 509.
Cambyses commits suicide, 522.	Philip, king, born in 383; carried as a hostage by Pelopidas to Thebes in 369; ascends the throne, 360; admitted to the Amphictyons, 346; killed and succeeded by Alexander in 336.	Democracy established in Athens, 510.	Ezra, governor of Jerusalem, 457.	Capitol finished, 507.
Darius throws down the walls of Babylon in 517 and reduces India in 508.		Sophocles and Euripides appear about 473.	Old Testament closes, 409.	Exile of Coriolanus, 487.
Battle of Arbela, followed by the capture of Susa, Babylon, and Persepolis, 331.	Alexander, at Zadracarta visited by Thalestris, Queen of the Amazons, with a train of 300 women.	Aristophanes, the comic poet, 440.	CARIA.	Quæstors appointed, 483.
		Socrates, the greatest heathen moralist, teaches, 430.	Death of king Mausolus, and erection of his tomb, which was one of the seven wonders of the world, 354.	Cincinnatus dictator, 456.
		Lacedæmonians defeated by Antipater, and king Agis killed, 330.		Licinian laws passed, 378.
				Sammite war begins, 345.
				Campania subdued, 340.

CHAPTER XL.

MACEDONIANS AND GREEKS IN ASIA.

In the spring of B. C. 334, Alexander crossed the Hellespont into Asia, at the head of about 35,000 men. His army was like that of the English in India, in respect of smallness, valor, discipline, and fighting qualities. Before he left home he gave away almost all the estates of the crown, and only reserved "hope" for himself. At Ilium, the ancient Troy, he did honor to the memory of Achilles, his maternal ancestor, and "set but little value upon the lyre of Paris; but," said he, "it would give me pleasure to see that of Achilles, to which he sung the glorious actions of the brave." (*Plutarch's Lives p.* 720.) Homer's Iliad was Alexander's Bible.

Memnon the Rhodian was the only Persian general whom Alexander feared. Contrary to Memnon's advice battle was given to Alexander on the Granicus, by a force little larger than his own. A desperate conflict ensued, in which he was the victor, and which left Asia Minor at his mercy. The death of Memnon in the spring of B. C. 333, relieved him of his only military dread; and, leaving the sea-coast, he plunged at once into the heart of the Persian empire. On taking Gordium, the seat of the ancient Midas, king of

Phrygia, "he found the famed chariot, fastened with cords, made of the bark of the cornel tree, and was informed of a tradition, * * That the fates had decreed the empire of the world to the man who should untie the knot." Some say he cut it asunder with his sword, "but Aristobulus affirms that he easily untied it, by taking out the pin which fastened the yoke to the beam, and then drawing out the yoke itself." (*Ib. p.* 722.) In Cilicia, he suffered from violent illness, brought on by great fatigues, and injudicious bathing in the cold waters of the river Cydnus. The delay thus occasioned caused Darius to seek him in battle, instead of waiting for him on the plain of Antioch. The two met in the defile of Issus, between Syria and Cilicia, B. C. 333, where the physical difficulties of the position allowed no advantage to numbers. Alexander fought in the foremost ranks, was wounded in the thigh, (Chares says by Darius,) but he conquered, killed over 110,000 men, and captured the mother, wife, and two unmarried daughters of Darius. The wife and daughters were among the most beautiful women in the world, but he would neither see them nor suffer anyone to speak of their beauty,—thinking "it more glorious and worthy of a king to conquer himself than to subdue his enemies."

Temperate in eating and drinking, scrupulous in religious observances, attentive to the comfort of his guests, and lavish in his gifts, he was the most wise and far-seeing strategist of his time. Leaving Darius to collect another army, which he might shatter in a third conflict, Alexander proceeded from Issus to Tyre, which he took by storm, from thence to Gaza, where he was wounded in the shoulder, but took the city; and from thence to Egypt. Twenty months sufficed to the reduction of the two cities and Egypt. In the latter country he founded the city of Alexandria, which still bears his name, in the most favorable situation for commerce. While there he visited the temple of Jupiter Ammon, and afterwards countenanced the report that the god, through his prophet, had called Alexander his son. His own maxim, as Plutarch remarks, "was more agreeable to sound philosophy." He said, "God is the common father of men, but more particularly of the good and virtuous." While perfectly willing that men should believe in his divinity, he was not the less conscious of his mere humanity. Long after this, when wounded by an arrow, and suffering great torture from it, he said: "My friends, this is blood, and not the ichor

'Which blest immortals shed.'"

Rejecting all the proposals of Darius for peace and friendship, Alexander, who had subdued the countries west of the Euphrates, marched on to meet him in decisive battle. The million of men with whom the Persian monarch had taken the field did not dismay him. The two armies met near Arbela. The Macedonian "cavalry charged at full speed, and the phalanx rushed on like a torrent." The engagement was a Waterloo to the Persians. Darius fled, and was murdered by his servants. Babylon, Susa, and Persepolis, the three capitals, surrendered after slight resistance, and the conqueror was acknowledged king of all Asia. At Susa he found in the king's palace forty thousand talents, ($60,000,000), in coined money. He seems to have been an affectionate son, but would not allow his mother, a mischievous busy-body, to meddle with political affairs. His governor in Macedonia complained much of her conduct, but he said: "Antipater knows not that one tear of a mother can blot out a thousand such complaints."

Not content to await in luxurious indulgence the submission of distant provinces, but delighting to conquer them, he prepared for further expeditions by self-exposure to danger and fatigue in hunting. On one occasion he killed a fierce lion, and was complimented by the Lacedæmonian ambassador with the remark: "Alexander, you have disputed the prize of royalty gloriously with the lion." His example excited his army to emulation,—"Let us march!" they cried. "We are neither weary, nor thirsty, nor shall we even think ourselves mortal, while under the conduct of such a king." The pursuit of Darius led to the conquest of Central Asia. Thence, through Afghanistan he entered India, subdued several tribes and nations, and wished to overrun the continent, but was compelled by the mutinous spirit of the soldiery to stop at the Hyphasis, (Sutlej), and turn his face homewards.

Alexander's character was now changing for the worse. Perhaps his wounds had something to do with it. The bone of his leg had been splintered by an arrow, the blow of a stone on the nape of his neck had nearly killed him; but still, like William of Orange, the "asthmatic skeleton," he had energy and will enough for persistence in spite of all drawbacks. Philotas and Parmenio, his old friends, were unjustly put to death; Clitus, another rough, plain spoken boon companion was killed by him in a fit of drunken rage. Flatterers, who comforted him by the assurance "that whatever is done by supreme power is right,"—the doctrine of the advisers of Charles I of England,—made him only more haughty and unjust. Honest and manly men, like his old tutor Aristotle, now excited his dislike. Some of the philosophers he hanged. Willful and headstrong, he characteristically determined to take another way back to the Persian capital. Building row-boats and rafts, he descended the Indus to the ocean; and then, with the bulk of his troops, marched through Gedrosia, (*Beloochistan*), and Carmania, (*Kerman*), into Persia. On the Indus he was severely and repeatedly wounded in the storm of a fortified place, "and was very near expiring." Meanwhile, his admiral Nearchus reopened the line of communication between the Indus and Euphrates.

Famine, fatigue, sickness attended Alexander's return. His losses exceeded those of all previous experience; but his army, led by himself, was a riotous, licentious procession of Bacchanals when he marched in triumph through Carmania. Profuse in his presents, excessive in his orgies, and reckless of his health, on his arrival at Susa, he married Statira, the daughter of Darius, and distributed the virgins of highest quality among his principal officers. His ambition and love of warfare were apparently intact. He proposed to round off and complete his empire by the conquest of Arabia, and to make Babylon his capital. But death, the universal conqueror, would not permit. His approach was heralded by the failure of health—broken by wounds, hardships, Gedrosian marches, Chaldæan malaria, and drunkenness—and by vain fears and superstitious anxieties. The final blow was struck in June, B. C. 323, and the mighty warrior and transcendent statesman fell to rise no more until the general resurrection of the race.

Alexander's style of character had undergone total revolution. He passed from virtue to vice in regular and progressive manner. "If there was any vice of which he was incapable, it was avarice; if any virtue, it was humility." His political genius was original, fair, and sagacious. By completely fusing and amalgamating his Greco-Macedonian subjects with the Medo-Persians, he aimed to rule and govern his dominions in the three continents of Europe, Asia, and Africa. Whether it would have been for the best had he succeeded is questionable. Hellenic culture found better material for future triumphs in the Roman manhood, which was just rising into prominence, and which was to rule the ancient world.

All Alexander's great plans collapsed at the time of his death. His widow, Roxana, who was then pregnant, destroyed Statira and her sister. There was no successor worthy of the throne. His generals aspired to regal dignity,

and his dominions were divided among them within a few weeks of his death. Bloody wars between the new rulers followed, and political changes were rapid as those of the kaleidoscope. In B. C. 315 Roxana and her son, the young Alexander, were still living; but in B. C. 311, were both murdered by the orders of Cassander.

Fresh kaleidoscopic changes follow, and in B. C. 302 Seleucus, at the head of all the forces of the east, advances from Babylon, and unites with Lysimachus. The combined armies give battle to Antigonus and Demetrius, at Ipsus in Phrygia, and completely defeat them. Antigonus is slain, and Demetrius escapes into Greece. Another division of Alexander's dominions now takes place, and the strongest lions take the largest share of the carcass. Lysimachus receives the greater part of Asia Minor; Seleucus obtains Cappadocia, part of Phrygia, upper Syria, Mesopotamia and the valley of the Euphrates; Cilicia is given to Pleistarchus; Cassander retains Greece, and Ptolemy Lagi keeps possession of Egypt.

The exhausted combatants were now at peace. The consumption of life and treasure in these terrible funeral games over the body of Alexander had been enormous, and prepared the way for the coming conquests of the Romans. But these twenty years of waste and woe were not without some compensations. Large and magnificent cities were founded; habits of military discipline were imparted to the Asiatics; the Greek language and learning spread over much of Asia and Africa; knowledge rapidly progressed; the Old Testament and the native histories of Eastern countries were made better known to the Greeks; great advances were made in the natural and exact sciences, and commerce extended its operations. On Greece itself the effects were evil and debasing. The old, manly, free-spoken independence was lost; public spirit and patriotism died; luxury and vice increased; "literature lost its vigor, art deteriorated, and the people sank into a nation of pedants, parasites, and adventurers." (Rawlinson's Ancient History, p. 247.)

SYNCHRONOLOGY, B. C. 334–302.

MACEDONIA.	GREECE.	PALESTINE.	ROME.	EGYPT.
Battle of the Granicus, May 22nd, 334; of Issus, October, 333; capture of Tyre, 332; submission of Jerusalem, and building of Alexandria, 332; battle of Arbela, 331; Philotas and Parmenio executed, 330; Scythians defeated, 329; Clitus killed, 328; victory over Porus in India, 327; death of Hephæstion at Ecbatana, 324; death of Alexander at Babylon, April 21, 323.	Appelles of Cos, the famous painter, 332. Lysippus of Sicyon, the sculptor, 329. Revolt of Lacedæmonians against Alexander; their defeat, and death of king Agis, 330. Demosthenes banished for corrupt dealings with Harpalus, 325.	Samaritan temple built on Mt. Gerizim, 330. Death of Jaddua, the Jewish High Priest, 320. Antigonus retakes Judea, 314. Era of the Seleucidæ—called the era of contracts by the Jews—begins, 312.	Papirius Carsor, dictator, 325. Army defeated at the Caudine Forks, 321. Samnites defeated at Luceria, 320. Romans begin the Etruscan war, 312. Aqueducts and baths in Rome, 310.	Ptolemy conquers Jerusalem, and colonizes many Jews at Alexandria, 320. Carries many Phœnicians and Jews with him into Egypt, 312.
				RHODES.
				Rhodians begin the construction of the Colossus, one of the seven wonders of the world, and complete it in 12 years, 302.

CHAPTER XLI.

GRECO-MACEDONIAN KINGDOMS IN THE EAST.

The SYRIAN kingdom of the SELEUCIDÆ, which lasted from B. C. 312 to B. C. 65, was one of the most powerful states that rose upon the ruins of Alexander's empire. When that dying conqueror was asked to whom he left the throne, he replied:—"To the strongest." Naturally enough each of several of his generals thought himself the strongest. Seleucus Nicator, or the *Conqueror*, was among the number. He assumed the diadem in B. C. 312, and in six years made himself master of all the countries lying between the Indus and Euphrates on the one hand, the Jaxartes and the Indian Ocean on the other. He invaded India and opened that country to commerce. In B. C. 301 his forces joined with those of Lysimachus, won the battle of Ipsus, and added Upper Syria, with part of Asia Minor to his empire. He removed his capital from Seleucia, on the Tigris, to Antioch, on the Orontes. With the other followers of Alexander, he had a special fondness for building new cities, which they named after themselves, their fathers, or their favorite wives. He built the port of Antioch, and called it Seleucia; divided his vast realm into seventy-two provinces, governed by Greeks or Macedonians; maintained a large standing army, and gave up his consort, Stratonice—whom he had married from motives of policy—to his son Antiochus, who had fallen desperately in love with her. In B. C. 281, the battle of Corupedion, in which his rival, Lysimachus, was slain, gave the whole of Asia Minor into his hands. He was at last murdered in open day. Antiochus I, called Soter, (*Saviour*), because of his once defeating the Gauls, B. C. 275, succeeded to the throne, B. C. 280. In B. C. 261, the Gauls defeated and slew him. Antiochus II, Theos, or "the god" followed. "Devil" would have been a more fitting surname, for he was a weak, sensual, profligate ruler, whose wife murdered him in the interest of her son, B. C. 246.

Seleucus II, Callinicus, (*Victorious*) next seated himself in the chair, still wet with his father's blood, and died in consequence of a fall from his horse, B. C. 226. Then came Seleucus III, Ceraunus, (*Thunderbolt*) assassinated B. C. 223; and after him Antiochus III, "the Great," another misnomer—for he provoked the hostility of the Romans, refused aid to the Carthaginians, declined the advice of Hannibal; was obliged to cede most of Asia Minor, and to pay a war indemnity of 12,000 talents, ($18,000,000) to the Romans. To obtain this he plundered the Oriental temples, and was killed in a tumult at Elymais, B. C. 187. His son, Seleucus IV, Philopator, (*Lover of his father*), then reigned until he was murdered B. C. 176. Then came Antiochus IV, Epiphanes, (*Illustrious*), a daring, intolerant, self-willed monarch, who plundered the Jewish temple, and set up the image of Jupiter Olympius in the Holy of Holies. His subjects gave him the appropriate title of Epimanes or *Madman*. His atrocious persecutions of the Jews are narrated in the Books of the Maccabees. He died of raving madness and loathsome disease, B. C. 164. Antiochus V, Eupator, was put to death in B. C. 162, by Demetrius Soter (*Saviour*), an intemperate drinker, whose friendship for the historian Polybius was the best quality of his nature, and who was killed, B. C. 151. The next king, Alexander Balas, was slain in B. C. 146 by his officers, who sent his head to his father-in-law, Ptolemy Philometer. The hated Jews had now become the chief dependence of the Syrian monarchs, and were granted national independence by Demetrius II, Nicator, in B. C. 142. He was captured by the Parthians, supplanted in his throne and in his wife's affections by Antiochus VII, Sidetes, recovered his crown, and was slain, B. C. 126. His unfaithful wife was put to death by his son and successor, Antiochus VIII, B. C. 121. Under him the empire shrank into a province, the country was exhausted, and its peace disturbed by bloody feuds. Assassinated in B. C. 96, he was followed by Seleucus V, another *Illustrious*, who was burnt alive by the people of Mopsuestia in Cilicia, from whom he had required a contribution. Three other kings of like character followed until Pompey reduced the remnant of the Seleucid empire to a Roman province, B. C. 65.

The record of the Seleucid monarchs is red with blood, and dark with malignant passions, unrelieved by a single ray of pure moral light. The rule of the Romans could not be worse than theirs, and was readily received by their tortured subjects.

The second great kingdom into which the empire of Alexander was partitioned was the EGYPTIAN kingdom of the PTOLEMIES. It lasted from B. C. 323 to B. C. 30. Ptolemy immediately set out for the African provinces, after they had been assigned to him, and established his capital at Alexandria. The great founder of the city was buried within its limits. Alexander's obsequies were conducted with the grandest barbaric pomp. "The body was placed on a funeral car, of such size and so loaded with gold ornaments, that eighty-four mules labored for a whole year in drawing it to Syria, on its way to Alexandria, where the conqueror fitly rested amidst the most enduring monuments of his fame, in what afterwards became the sepulchre of the Ptolemies." (*Philip Smith's Ancient History, Vol. ii, pp.* 83-4. Under Ptolemy's wise and energetic rule the character of the Egyptians changed for the better, commercial intercourse with foreigners became common, enterprise throve, literature flourished, and the people—though unchanged in language and religion—were satisfied with their new political relations. Jews, Greeks and Egyptians dwelt side by side at Alexandria. The Jews had great privileges, and formed a self-governing community, subject to the crown. The Egyptians were probably ruled by an official appointed by the king. The Greco-Macedonians were the sole full citizens. The king was absolute. The old religion was protected, and the priestly privileges were continued. The standing army was Greco-Macedonian, a great navy was established, and an efficient civil service organized. Ptolemy collected an extensive library. Men of learning were invited to the metropolis. The "Museum" was founded. It was a College of Professors, which rapidly drew around it a vast body of students. Poetry, mathematics, astronomy, and medicine, were the four lines of study. The Museum, or University building, contained chambers for the professors; a common hall where they took their meals together, a long corridor for exercise and walking lectures, a theatre for scholastic festivals and public disputations, a botanic garden and a menagerie. Alexandria became the university of the Eastern world, and enjoyed the services of mathematicians like Euclid, poets like Callimachus, geographers like Eratosthenes, astronomers like Hipparchus, historians like Manetho—all of whom adorned the reign of Ptolemy Lagi. He was sincere and generous, brave and unostentatious. He built the lofty Pharos, (a light-house), the mausoleum of Alexander, the temple of Serapis, and the Hippodrome, or great race-course, and also repaired many Egyptian temples and other buildings.

Ptolemy Philadelphus succeeded to the throne in B. C. 309, was a successful home administrator, reopened the canal between the Nile and the Red Sea, turned the current of commerce with India and Arabia so that it flowed through Egypt for several centuries, and had an annual customs revenue from Egypt alone—without counting the tribute in grain—of 14,800 talents, or $22,200,000. Other provinces paid tribute. His army and navy were enormous. Literary works of the highest value were undertaken at his suggestion. The most important of these was the translation of the Hebrew Scriptures into the Greek language. Aristeas says that Eleazar, the Jewish High Priest, in response to the request of Philadelphus, sent seventy-two persons—six out of each tribe—with a magnificent copy of the law, into Egypt. These interpreters completed the translation into Greek in seventy-two days. It was then read to a number of Jews,—summoned together for that purpose—approved of by them, and the interpreters were sent home, laden with presents. This is the legend of the origin of the *Septuagint*. It is probably incorrect. Rawlinson says the translation was begun in the reign of Philadelphus, and finished afterwards. A great king, and a wise patron of art, science, and learning, Philadelphus was in one respect a very immoral man, who divorced his wife and contracted an incestuous marriage with his own full sister, Arsinoe.

Ptolemy Euergetes, (*the Benefactor*), B. C. 247-222, was also a patron of arts and letters, and left his kingdom in a very flourishing condition. Nine other Ptolemies followed, of whom Philometer was mild and humane, Lathyrus amiable but weak, and Dionysus young and incompetent. The rest were equally detestable, and often incestuous, intemperate, and profligate. Philopator was both a literary man and a lover of men of learning. Epiphanes was declared of full age, and assumed the reins of government at the age of fourteen, B. C. 196. "To this occasion belongs the famous 'Rosetta stone,' which contains a decree of the priests at the time of the coronation of Epiphanes, establishing the name in which he was to be worshipped thenceforth in all the temples." Under the joint reign of the Ptolemies Philometor and Physcon, Antiochus Epiphanes would have captured Alexandria, had he not been ordered to evacuate the country by the Romans, who thenceforward exercised a kind of protectorate over Egypt. The brothers were unreportably vile,—especially Physcon, who murdered his own son, and then sent the victim's head and hands to his sister wife, Cleopatra, in order to grieve her. Ptolemy Alexander II murdered his wife, and thereby so enraged the Alexandrians that they slew him in the public gymnasium, B. C. 80. Ptolemy Auletes (the Flute-player), next occupied the throne, and died in B. C. 51, after having done all he could to degrade and ruin his country. He was followed by his famous daughter, Cleopatra, who married her younger brother, Ptolemy, whom she tried to destroy. Driven into Syria, she fascinated Julius Cæsar by her charms, B. C. 48, was reinstated in the throne by him, B. C. 47, poisoned her second husband, who was also her second brother, and prospered under Cæsar's protection until he died. She then enslaved Mark Antony, B. C. 41, for the rest of his lifetime. As bad as she was beautiful, as mischievous as she was gifted, as baneful as she was fascinating, she yet showed the royal spirit of the Ptolemies, and—the last of her race—preferring death to captivity, committed suicide upon the capture of her capital by the Romans, B. C. 30.

Most prominent of the smaller Greco-Macedonian kingdoms in the east was that of PERGAMUS, which lasted from B. C. 281 to B. C. 130. Its founder was the eunuch Philetærus, whom Lysimachus, the ruler of Thrace, had made the guardian of his treasures. On the death of that monarch, the eunuch assumed the crown of Pergamus, and ruled until his death in B. C. 263, when he transmitted his principality and treasures to his nephew, Eumenes. The military genius and prudence of Eumenes,—who died from the effects of over-drinking, in B. C. 241,—and of his successors, who skilfully sided with the strongest party, made the kings of Pergamus masters of half Asia Minor. They encouraged art and literature, adorned their capital with noble buildings, established a large public library, built up a grammatical and critical school only second to that of Alexandria, and substituted the *charta Pergamena* (parchment), as a literary material for the Egyptian papyrus.

Attalus I, cousin and successor of Eumenes, who reigned from B. C. 241-197, was victor over the Galatian Gauls, and was the valuable ally of the Romans. Under Eumenes II, B. C. 197-159 the monarchy became one of the greatest kingdoms of the east. Attalus II followed, and distinguished himself as a lover of paintings by giving $150,000 for one picture, and by offering a large sum for another. Attalus III, called Philometer in honor of his mother, crowded all the odious crimes into his short reign,—B. C. 138-133—that he possibly could, was a wholesale murderer, put his mother to death, left the Roman people all he had, and died of sunstroke. Rome accepted the legacy, and in B. C. 130 made Pergamus a Roman province.

BITHYNIA became independent under Bas, B. C. 376, and remained so till B. C. 74. Prusias the Lame, B. C. 228-180, was the ablest of its kings, a great warrior, and the friend of Hannibal. Prusias II, B. C. 180-149 was abject, wicked and contemptible; Nicomedes II, was an ambitious, unscrupulous soldier, whose successor, Nicomedes III, left his kingdom by will to the Romans, B. C. 74. PAPHLAGONIA was independent from B. C. 200 to B. C. 102, when Mithridates, king of PONTUS seized it. Pontus became a separate sovereignty in B. C. 318 under Mithridates I. Its subsequent history, until the accession of Mithridates V, (*The Great*), is like that of all similar eastern monarchs. He reigned from B. C. 120 to B. C. 64; was a man of wonderful genius, energy, and resources; spoke twenty-five languages; greatly enlarged his dominions, and strengthened himself by alliances with the wild tribes on the Danube, whom he hoped one day to launch upon Italy. Intuitively he discerned the source whence destruction to the Roman power must eventually come. In B. C. 86 he ordered that all Romans and Italians in Asia should be massacred, and thus caused the death of 80,000 persons. Under more favorable conditions he might have conquered, or at least checked the Romans. He did win several great victories over them, and seemed to be on the point of success, when the genius of Pompey enlisted the Parthians against him, B. C. 66. Driven back to his old kingdom of the Bosporus, (in Southern Russia) he formed the design of marching upon Italy through southeastern Europe, and when his army refused to support him, caused himself to be dispatched by one of his guards, B. C. 63. The bulk of Pontus then became a Roman province.

CAPPADOCIA, GREATER ARMENIA, ARMENIA MINOR, BACTRIA, PARTHIA, and JUDEA were the remaining lesser monarchies in the east that rose on the ruins of Alexander's dominions. Their history is given in other connections.

SYNCHRONOLOGY B. C. 301-30.

SYRIA.	EGYPT.	ASIA MINOR.	GREECE.	ROME.
Seleucus builds Antioch, 300.	Euclid the mathematician, 330.	Pergamus, kingdom of, founded, 285.	Pyrrho, founder of the skeptics, Epicurus of the Epicureans, 300.	First sun dial erected by Papirius Cursor, and the time first divided into hours, 293.
Accession of Antiochus the Great, 223.	Light-house of Pharos, the seventh wonder of the world, finished by Ptolemy, 285.	Prusias, king of Bithynia, goes to Rome, 166.	Athens taken by Demetrius Poliorcetes, 295.	Pyrrhus invades Italy, 280.
Battle of Magnesia,—a Syrian defeat, 190.	Septuagint translation made 277.	Tigranes, king of Armenia, 93.	Theocritus, the father of pastoral poetry, 285.	Gladiators first exhibited, 264.
Seleucus Philopator poisoned by Heliodorus, 175.	Art of surgery introduced, 219.	Victories of the Roman Sulla over Mithridates 86.	Sparta free, 266.	Temple of Janus shut, and Rome at peace, 235.
Antiochus profanes the Jewish temple, 167.	Ptolemy Auletes ascends the throne, 65.	Defeat of Mithridates by Lucullus, 73. Again defeated by Pompey in a night battle, 66. His treasures captured by Pompey at Caina, 58.	Cleanthes, the Stoic, starves himself, 240.	Numa's books found in a stone coffin at Rome, 179.
Demetrius Nicator grants entire freedom to the Jews, cir. 143.	Cleopatra succeeds, 51; alliance with Cæsar, 47; fascinates Antony, 41; kills herself, 30.	Antony makes himself master of Armenia, 33.	Corinth rebuilt by Cæsar, 45.	Philosophers and rhetoricians banished from Rome, 161.
Reduced to a Roman province by Pompey who thus establishes the fourth great monarchy of Daniel's prophecy, 65.			JUDEA.	Cicero, Sallust, Lucretius and Catullus flourish, 60.
			Siege of Jerusalem by Herod, 39—captured in 37, and Maccabean governments ended.	

[TO BE CONTINUED.]

Speaking of the mixed population in the United States, a writer in Frazier's magazine says: "In my little restaurant at Monterey, we have sat down to table day after day, a Frenchman, two Portuguese, an Italian, a Mexican, and a Scotchman: we had for common visitors an American from Illinois, a nearly pure-blood Indian woman, and a naturalized Chinese; and from time to time a Switzer and a German came down from country ranches for the night. No wonder that the Pacific coast is a foreign land to visitors from the Eastern States, for each race contributes something of its own.

ORIGIN OF NATIONS.

ON THE CIVILIZATION OF THE BRITISH CELTS.

Supposed high antiquity of Celtic civilization in Britain—Contradicted by Cæsar, Strabo, Diodorus, and others—Account given by Cæsar—Accounts of Diodorus and Strabo—Accounts of Tacitus—Theory that the civilized Celts were those of the interior, contradicted by Cæsar—Conclusions of archæologists on the subject—Monuments of the Celtic period—Cromlechs—Pottery—Tools and implements—Druids' circles—Stonehenge and Avebury—Amount of mechanical skill implied in these works not great—No astronomical knowledge implied in them—Low character of the Celtic civilization before the Roman invasion.

A considerable antiquity has been claimed by some writers for the civilization of the British Celts. The late Archdeacon Williams, a man of much acuteness and of considerable learning, maintained, in more than one of his works,[1] that civilization had commenced in Britain as early as B. C. 1000, and that by the year B. C. 400—three centuries and a half before the first invasion of our island by the Romans—the progress made was such as to entitle the British race to a high position among the nations which then held possession of the earth. "Our memorials point," he said, "to eras and instances in which the civil arts and sciences were cultivated to an extent that would not have degraded (disgraced?) the best ages of Greece and Rome."[2] The Britons, he thought, possessed, before the Romans came, an extensive literature in prose and verse, a refined science of music, a knowledge of astronomy based on the use of telescopes, a great skill in mechanics, a good system of agriculture, considerable commerce, some acquaintance with metallurgy and medicine, a high moral teaching, an admirable code of laws, and a very fair appreciation of the science of politics.[3] He based his conclusions mainly on the view that the Welsh poems called "The Triads" might be relied upon as giving an authentic account of the early history of the nation,[4] derived from ancient tradition, and committed to writing at least as far back as the fourth century before our era. He summed up his conclusions on the entire subject, very confidently, in the following words: "Thus it appears that our British ancestors, instead of being a nation of barbarians and savages, as they are too commonly represented, were really an enlightened people [at the time of the Roman invasion], far advanced in civilization and intellectual improvement."[5]

The main objection to this view, which naturally occurs to every one on first becoming acquainted with it, is the fact that it is wholly irreconcilable with the account given us of Britain by Cæsar, and confirmed by other writers, as especially Strabo, Diodorus, and Tacitus. Cæsar tells us that[6] the natives in his time were not generally agriculturists, but lived on milk and meat, and clothed themselves with skins. They dyed their skin with a blue tint made from woad, to give them a more terrible appearance in battle; they wore their hair long, and shaved all their body except the head and the upper lip. They fought chiefly on horseback or from chariots, and attacked with howls and shouts, with which they expected to frighten the enemy. Each man had

[1] See his "Gomer" (London, 1850), and also his "Ecclesiastical History of the Cymry" (London, 1844).

[2] "Eccles. History of the Cymry." p. 30.

[3] Ibid. pp. 31 37.

[4] See the Preface to the "Ecclesiastical History," p. vii., where Mr. Williams says of the Triads, "Indeed they are the authorities which may be said to impart to this work its peculiar character, or to *form the basis on which it stands*."

[5] "Eccles. History," p. 38.

[6] See the "Commentarii de Bello Gallico," v. 12—15.

a single wife; but the members of a family, or of a village, held their wives in common. Their "towns" for the most part consisted of a space in the fastnesses of the woods, surrounded by a mound and trench, and calculated to afford them a retreat and protection from hostile invasion. They had no coined money, but made use, instead, of bronze or iron bars, of a certain fixed weight. They were divided into numerous petty tribes, often at war one with another, and entirely devoid of anything like unity or cohesion, even under the pressure of a foreign invasion. Their religion was apparently the same as that of the Gauls[1]—a dark and gloomy superstition, involving subjection to a priest-caste, the Druids, and requiring the continual sacrifice by fire of numerous human victims for the appeasing of the Divine anger.[2] Cæsar is not aware that the Britons had a literature, or even letters; he assigns them no science, unless science is included in the religious knowledge, in which he regarded the British Druids as excelling those of Gaul.[3] The only commerce of which he speaks as having come to his knowledge is an importation into Britain of bronze.

Diodorus and Strabo, who wrote in the reign of Augustus, confirm generally the statements of Cæsar, but add various particulars. Diodorus describes the ordinary dwelling places of the Britons as mere temporary establishments, formed in the forests by enclosing a place with felled trees, within which were made huts of reeds and logs, and sheds for cattle, "not intended to last very long."[4] Strabo says the Britons were complete strangers both to agriculture and to gardening, and notes further that they fell behind most pastoral nations, inasmuch as they were unacquainted with the manufacture of cheese.[5] Diodorus differs from Strabo in representing the bulk of the British nation as agricultural, and says they "stored the corn, which they grew, in the stalk, in thatched houses,"[6] which is perhaps his way of describing ricks. Both Strabo and Diodorus represent the British trade as considerable. They speak of tin as largely exported by the Britons, who also made a profit by the export of slaves and dogs. They imported, according to Strabo, besides bronze, ivory bracelets, necklaces, and various small wares, including vessels of glass.

The unsubdued Britons, whom Tacitus describes, were, according to his accounts, "barbarians," more ferocious than the Gauls.[7] They had the same religion as the Gauls, but were even deeper sunk in superstition.[8] Their orgies took place in the depths of sacred groves, where the blood of human victims flowed freely from the altars, and the will of the gods was discovered from an inspection of the still palpitating entrails.[9] The disunion that had rendered the rest of the nation an easy prey to Rome's disciplined bands continued, and it was seldom that any two states could be induced to make common cause against a foreign foe.[10] The style of warfare in vogue was rude and primitive; the chief dependence was still placed on chariots; tactics were ignored; and every battle was an attempt to overwhelm the Romans by the mere preponderance of brute force. The arms of the Britons were contemptible; their swords were unduly long and had no points;[1] the size of their shields was small; and they were without breast-plates or other defensive armor. Altogether the picture drawn is that of a race who, if not actual savages, are at any rate not very far removed from the savage condition, and of whom it is quite absurd to say that "they were really an enlightened people, far advanced in civilization and intellectual improvement."[2]

Archdeacon Williams endeavored to meet the argument drawn from the statements of Cæsar, and supported by the general *consensus* of the classical writers, by asserting that the really civilized Celts had retreated before Cæsar's time into the western parts of Britain, and that he consequently never came into contact with them,[3] but only with some comparatively barbarous tribes, who had recently invaded the island from the Continent. But it is unfortunate for this theory that Cæsar himself distinctly states that the inhabitants of the part of Britain which he invaded were "the most civilized of all" (humanissimi,) and that the tribes of the interior were ruder and more backward.[4] It is also to be noted that his account is corroborated by the later Latin writers,[5] who distinctly show that the Romans, as they advanced into the island, fell in with races less and less civilized, until they came in Scotland to tribes whom they had a right to call absolute "barbarians," the Ottadini Horestii, and Mæatæ, who held the country north of the Tyne and Irthing.[6]

Again, if, discarding the accounts of writers who (it may be argued) cared to know but little of a people in whom they felt no interest, we throw ourselves upon archæological facts, and inquire what they have to tell us with respect to the condition of the British Celts prior to the Roman invasion, we shall find additional reason to misdoubt the views of the enthusiastic Archdeacon, and to conclude that the ante-Roman civilization of Britain, if it deserves the name at all, was of a very low order. If we ask a temperate archæologist[7] what ancient remains existing in our island may be reasonably assigned to the pre-Roman Celts, he will point in the first place to the class of megalithic monuments called "cromlechs," and say, "these are almost certainly pre-Roman;"[8] next he will point to a certain amount of pottery, chiefly sun-baked;[9] and, thirdly, to various weapons, tools, and ornaments of stone, flint, spar, or bone, which he will say are probably to a large extent pre-Roman, though many not distinguishable from the rest, may belong to Roman, or even to later times.[10] Finally, he will point, but very doubtfully,[11] to the great stones arranged in a circular form, and

[1] Ibid. vi. 13: "Disciplina in Britannia reperta, atque inde in Galliam translata." Cæsar's meaning would perhaps be doubtful, if we did not find, from later Roman writers, that Druidism flourished in Britain.

[2] "Immani magnitudine simulacra habent, quorum contexta viminibus membra vivis hominibus complent: quibus succensis circumventi flamma exanimantur homines" ("De Bell. Gall." vi. 16).

[3] Cæsar assigns some astronomical knowledge to the Gaulish Druids. "Multa de sideribus atque eorum motum," he says, "de mundi ac terrarum magnitudine, de rerum natura, de deorum immortalium vi ac potestate disputant et juventuti tradunt." (Ibid. vi. 14).

[4] Diod. Sic. v. 21.

[5] Strab. iv. p. 138.

[6] Diod. Sic. l. s. c.

[7] Tacit. "Agricola," sec. 11.

[8] Ibid. Compare "Ann." xiv. 30.

[9] "Cruore captivo adolere aras et hominum fibris consulere Deos fas habebant." Tacit. "Ann," l. s. c.

[10] "Agricola," sec. 12.

[1] "Agricola," sec. 36.

[2] Williams's "Eccles. Hist." p. 38.

[3] Ibid. p. 49.

[4] "De Bell. Gall." v. 14.

[5] Dean Merivale throws a slight shadow of doubt on Cæsar's veracity, on the ground that the later writers, such as Dio Cassius and Tacitus, say nothing of "the painted bodies, the scythed chariots, the hideous sacrifices, and the revolting concubinage" of the Britons ("Roman Empire," vol. vi p. 224, note). It must be allowed that they do not; but is not the supposition that a hundred years of intercourse with the Romans themselves and with the Romanised Gauls and Germans of the opposite coast had produced the change, a more probable explanation of the difficulty than one which taxes the great Julius with an intentional misrepresentation, designed to cover his own failures, and prevent them from being too jealously scrutinized?

[6] See Dean Merivale's "Roman Empire," vol. vii. p. 324 (edition of 1865).

[7] Such as Mr. Thomas Wright, from whose sensible work, "The Celt, the Roman, and the Saxon," the following remarks are for the most part taken. The quotations follow the edition of 1873.

[8] Wright's "Celt, Roman and Saxon," pp. 72-75.

[9] Ibid. pp. 93-95.

[10] Ibid. pp. 4, 95-98, 116-118.

[11] "It is remarkable," observes Mr. Wright, "that the only excavation within the area of Stonehenge, of which we possess any account, *brought to light Roman remains*" (p. 108).

generally known as "Druids' circles," which occur in various parts of England, more especially in the west and in the north, beginning with a diameter of sixty feet, and with stones about the height of a man, and culminating in the gigantic monuments of Avebury and Stonehenge, where the area is 1,400 feet, and the height of the largest stones twenty or twenty-one feet. These, he will say, are probably Celtic; but whether pre-Roman or not, he will scarcely venture to determine.

Now, if we allow all these remains, even the last, to be native Celtic—produced, *i. e.*, by the Celts themselves without foreign assistance—what amount of civilization do they imply? The cromlechs are sepulchral chambers of a very rude kind. They consist usually of four stones, three forming the walls of the chamber, while the fourth serves to roof it in, the remaining side being left open. There has been no shaping of the stones by art; they are as they have come out of the quarry, or as they have been found on the earth's surface. The size and weight of the stones are considerable, but still not such as to imply any very great mechanical skill in those who moved them and emplaced them as they are found. Each cromlech was originally covered by a mound or barrow, which may in some cases have attained a height of fifty feet. Erections of this character are indications of a civilization very much below that of the Lydians[1] of the sixth century B. C., which (as we have seen) was not very advanced. The pottery of the Celtic Britons is remarkably coarse and rude. The shapes have little elegance; the patterning is of the simplest kind, consisting of dots, parallel lines, crosses, and sometimes zigzags, which are scratched upon the surface, apparently with a pointed stick;[2] handles, where they exist at all, are mere loops, intended probably to have cords passed through them by which the vessels might be suspended. Most of the vessels are merely sun-dried; though some, found commonly in the more southern parts of England, have been placed in a kiln and baked.[3]

The weapons, tools, and ornaments found with the pottery above described, are for the most part either of stone or bronze. The stone tools and weapons are mostly merely chipped into shape; but occasionally specimens are met with which must have been formed by some machine like a lathe.[4] The tools comprise axes, chisels, gimlets, and saws; the weapons are chiefly spear-heads and arrow-heads. These last are sometimes beautifully finished. The bronze implements are most commonly of the class which has been denominated "celts," from the Latin *celtis*, "a chisel."[5] With these are found punches, gouges, and other similar tools, and also numerous spear-heads and arrow-heads, with an occasional dagger or sword. The swords greatly resemble the Roman, and it is a question whether they were not imported from the Continent. In a few instances traces of armor have been found, and in one the breast of a skeleton was covered with a corselet of thin gold, embossed with an ornamentation resembling nail heads and lines.[6]

Finally, with regard to the "Druids' circles," we may set aside the smaller ones, which are at least as rude as the cromlechs, and which appear to have been mere supports, designed to prevent the giving way of barrows or sepulchral mounds, and confining ourselves to the consideration of the larger, such as Stonehenge and Avebury, inquire, Is there anything in them which really implies *great* mechanical skill, or "a proficiency in the science of astronomy"?[1] Now certainly they are in advance of the cromlechs. They "differ from other Celtic stone ornaments in the circumstance that the stones have been hewn and squared with tools, and that each of the upright stones had two tenons or projections on the top, which fitted into notches or hollows in the superincumbent slabs.[2] The largest of the upright stones being twenty-one feet in height, and these sustaining imposts of many tons in weight, the architects must have possessed the power of raising such vast masses to the height at which they are found, and of manipulating them at that height, so as to insert the tenons into the mortices. As, moreover, the quality of the stones is in many cases such as is quite unknown in the neighborhood, there must have been possessed by the builders a power of conveying such masses by land—for water-carriage is out of the question—a very considerable distance, perhaps as much as thirty or forty miles.[3] These are the indications that Stonehenge and Avebury give of mechanical knowledge and skill. We have to consider to what they amount.

Now the conveyance of large masses of stone in a tolerably level country to a distance from the place where they were quarried, implies no very great mechanical knowledge—it is simply a question of the application to the proposed end of a large amount of muscular force, animal or human. Both the Egyptians and the Assyrians conveyed their colossal figures for considerable distances by the simple expedient of placing them upon a wooden sledge, whereto they attached ropes, by means of which gangs of men dragged them to the point required.[4] The weight of the Assyrian colossi is estimated at from forty to fifty tons,[5] that of the Egyptian is often very much greater.[6] The largest of the stones at Avebury and Stonehenge do not, it is probable, exceed half this weight.

With regard to the raising of large stones into place, the Egyptians, we know, elevated them by means of machines,[7] which must have resembled our own cranes; but it is not necessary to suppose that mechanical appliances of this description were in use among the Celtic architects. More probably they employed inclined planes of earth or stone, up which the blocks were dragged, still on their sledges, and having in this way brought them to the required height, emplaced them by sheer muscular strength upon the uprights. The covering stones of cromlechs were doubtless raised into place by the same means, the mound being then continued above them, whereas at Stonehenge and Avebury after it had served its purpose it was cleared away.

It would seem, therefore, that even the greatest of the Celtic monuments imply no more than a moderate amount of mechanical ingenuity in the people who constructed them. How they can be supposed to indicate "proficiency in the science of astronomy" it is difficult to conceive. Circles of thirty stones indeed are found, in which a lively imagination may conjecture a reference to the lunar month. But on the whole it is only by a series of the most arbitrary and forced interpretations that either the numbers or the proportions can be argued to have an astronomical bearing. It is not unlikely that the circles were temples, and it is quite possible that in some of them the special object of wor-

[1] The present height of the barrow of Alyattes is about 150 feet. The sepulchral chamber enclosed within it indicates a civilization very much beyond that required to construct a cromlech.

[2] Wright, p. 93.

[3] Wright, p. 94.

[4] Ibid. p. 98.

[5] See Hearne's "Discourse concerning some Antiquities found in Yorkshire," printed as an appendix to the first volume of his edition of Leland's "Itinerary," where the name of "celtes" is first applied to these implements. The resemblance of the word to the ethnic name, Celt, has unfortunately given rise to the wholly mistaken idea that the implements are peculiar to that people.

[6] See Wright, p. 105.

[1] So Archdeacon Williams ("Eccles. History of the Cymry," p. 36).

[2] Wright, p. 79.

[3] A portion of the blocks at Stonehenge is thought to have been brought from Devonshire (Wright, p. 83), there being no stone of the quality nearer than that county.

[4] See Layard's "Nineveh and Babylon," pp. 106 116.

[5] Ibid. p. 110.

[6] One Egyptian colossus is estimated by Sir G. Wilkinson to have weighed 887 tons! ("Ancient Egyptians," vol. iii. p. 331.)

[7] Herod. ii. 125.

ship may have been the sun;[1] but beyond this we have really no data for determining the aim or intention of the structures in question.

On the whole, the conclusion seems forced upon us that the British Celts, though not absolute savages, had succeeded in developing only a very low type of civilization before the Roman conquest. They were not, perhaps, wholly ignorant of letters, but they made little use of them; they knew something, but not very much, of metallurgy, of mechanics, of agriculture, of the art of pottery; they had domesticated horses and horned cattle; they could weave; they could construct chariots; they had constructed a system of roads; but they were wretchedly lodged and clothed; their houses were of the meanest description; they wore war-paint and sought to frighten a disciplined enemy by their cries and shouts; their religion was a debased and gloomy superstition; their political organization was the weakest possible; their tombs, on which they bestowed great pains, were rude and clumsy; their temples, if the so-called "Druids' circles" are the remains of temples, were grotesque. We can see no sufficient reason for regarding the British Celts as more advanced than their kindred in Gaul,[2] whom no writer, so far as we are aware, claims to have been a civilized nation.

RESULTS OF THE INQUIRY.

General agreement in a moderate chronology, except in the single case of Egypt— Extraordinary contrast—Question, one to be decided by evidence—Overwhelming evidence needed to establish *very* improbable conclusions—Extreme improbability of Egypt having been the only civilized country for two thousand years—Consideration of the evidence—Defects of the monumental evidence—Contradictions—Incompleteness—Admissions made by Brugsch—Evidence of Manetho—Doubt whether he is correctly reported—Reasons why little reliance is to be placed on his numbers (*a*) as reported; (*b*) as originally set forth—Mistakes of Manetho—Absurdity of his general scheme—Recapitulation of conclusions—Their harmony with the chronology of the Septuagint—Tabular view of the chief conclusions arrived at.

The general result of the inquiry wherein we have been engaged, would seem to be that, so far as civilization can be traced back historically, there is one country, and one country only, where the critical judgment of the present day is still in suspense, and some difficulty exists in reconciling the conclusions of historical and archæological science with those moderate notions of the date whereto the past history of our race extends, which till lately were almost universally held, and which are still generally maintained in educational text-books. Exaggerated chronologies are common to a large number of nations; but critical examination has (at any rate in all cases but one) demonstrated their fallacy; and the many myriads of years postulated for their past civilization and history by the Babylonians and Assyrians, the Hindoos, the Chinese, and others, have been shown to be pure fiction, utterly unworthy of belief, and not even requiring any very elaborate refutation. Cuneiform scholars confidently place the beginnings of Babylon about B. C. 2300,[3] of Assyria, about B. C. 1500.[4] The best Aryan scholars place the dawn of Iranic civilization about B. C. 1500,[5] of Indic about B. C. 1200.[6] Chinese investigators can find nothing solid or substantial in the past of the "Celestials" earlier than B. C. 781, or at the furthest B. C. 1154.[7] For Phœnicia the date assigned by the latest English investigator is "the sixteenth or seventeenth century before Christ."[8] The researches of Dr. Schliemann in the Troad give indications of the existence of a low type of civilization in that region, which may reach back to about B. C. 2000.[9] In the rest of Asia Minor we have no certain knowledge of any civilization that has a greater antiquity than about B. C. 900.[10] In Europe, the simple and incipient civilization delineated by Homer must have existed before his time, and may have commenced as early as the Trojan epoch, which is probably about B. C. 1300—1200. No other European civilization can compete with this, the Etruscan not reaching back further than about B. C. 650 or 700,[9] and the Celtic, such as it was, being really subsequent to the occupation of England by the Romans.[10] A *concensus* of *savants* and scholars almost unparalleled limits the past history of civilized man to a date removed from our own time by less than 4,400 years, *excepting in a single instance*. There remains one country, one civilization, with respect to which the learned are at variance, there being writers of high repute who place the dawn of Egyptian civilization about B. C. 2700, or only four centuries before that of Babylon, while there are others who postulate for it an antiquity exceeding this *by above two thousand four hundred years!*

It is well remarked by Professor Owen, in an able paper, "On the Antiquity of Egyptian Civilization,"[11] that "the value to be assigned to discrepant conclusions on a matter of scientific research, must rest on the evidence with which such conclusions may be severally supported." Most certainly, no one would desire the decision to be made on any other grounds than these. The whole question is one of evidence, and to that point we shall presently proceed to address ourselves; but there is one preliminary consideration to which we think it right to call the attention of our readers.

The same amount of evidence is not sufficient to establish

[1] The late Professor Phillips (of Oxford) informed me that, in the direction of the main avenue of approach at Stonehenge, and in the position of certain detached stones with respect to the central triliths, he thought he saw indications of solar worship. That the sun (Apollo) was worshipped by the Celts is stated by Cæsar ("Bell. Gall." vi. 17).

[2] In most respects the Gallic Celts were in advance of the British. They had *cities*, which were strongly walled, and which the Romans had to take by regular sieges ("Bell. Gall." vii. 17-28); they had extensive ironworks (ibid. vii. 22); they made use of letters (ibid. i. 29, vi. 14; compare Strab. iv. p. 181); they built bridges over their rivers ("Bell. Gall." ii. 5); they had ships in which they were in the habit of crossing the Channel between Gaul and Britain (ibid. iii. 8); they possessed a considerable trade (Strab. iv. p. 189; Diod. Sic. v. 22); they had a native coinage before Cæsar's invasion (see Mr. Long's note, p. 69 of his edition of the "Bell. Gall."); and they exhibited a general aptitude for practical avocations. On the other hand their houses were almost as rude as those of the British Celts, being made of branches of trees and clay, and thatched with straw (Vitruv. i. 1); their political organization was lamentably weak; their religion was the same gloomy superstition which prevailed in Britain ("Bell. Gall." vi. 13, 14). They even looked to Britain as their original instructress in religion, and sent their youths there to be taught the deeper mysteries of the Druidic cult.

[1] Lenormant, "Manuel d'Histoire Ancienne de l'Orient," vol. ii. p. 22; G. Smith, "Notes on the Early History of Assyria and Babylonia," London, 1872, etc.

[2] Lenormant, "Manuel," vol. ii. p. 55; Sayce in "Records of the Past," vol. iii. p. 29, note 1.

[3] Haug, "Essays on the Sacred Language, Writings, and Religion of the Parsees," p. 225.

[4] Max Müller, "Ancient Sanskrit Literature," p 572.

[5] See an article by Dr. Edkins in the October number of the "Leisure Hour" (1876), p. 653.

[6] Kenrick, "Phœnicia," p. 340.

[7] Assuming that the rate of accumulation on the site of Hissarlik prior to the building of the Greek Ilium, about B. C. 700, was tolerably uniform, and taking B. C. 1250 as the most probable date for the capture of Troy by the Greeks, we are brought to a time a little anterior to B. C. 2000 for the first deposit of human remains upon the native rock. The uniformity, however, of the rate of accumulation is uncertain.

[8] See above, ch. v.

[9] *Supra*, p. 112.

[10] See the preceding chapter.

[11] "Leisure Hour" for May, 1876, p. 324. This paper is reprinted in an appendix at the end of this work.

all conclusions. Very slight and weak testimony is enough for reasonable men, if the point to be established is intrinsically probable. Much higher and stronger testimony is necessary, if it is improbable. If it is very highly improbable, reasonable men will hesitate to accept the conclusion unless the evidence for it be well-nigh overwhelming.

Now, in the present case, the conclusion sought to be established by the advocates of the "long chronology" is, we venture to say, *very highly* improbable. It is no less than to suppose one section of mankind to have stood for above two thousand years on a totally different level from all other sections. It is to suppose settled government, law, order, high morality, art, science of a certain kind, to have existed for two thousand years in a single locality without spreading to other nations, without being imitated, without communicating itself; and this, not in a sequestered island, not in a remote corner of the earth, but in a veritable "highway of nations," in a land which has always been a passage territory between east and west, between north and south, which stands in the closest connection with the fairest portions of the eastern world, and (as has often been said) "belongs to Asia rather than to Africa." What was the rest of mankind doing while Egypt stood at this proud eminence? Why did they make no similar advance anywhere else? How came they, all of them, to rest content with their knives of flint and chert, their stone hammers and adzes, their ornaments of bone and shell, their huts of reeds and clay, or at best of sun-dried bricks? Did they know nothing of Egypt during these twenty or five-and-twenty centuries? or did they look on without envy at the happy country in their midst, and make no efforts to be like her? To us, nothing seems more unlikely, more inconceivable, than two millenniums of high Egyptian civilization, including art, science, good government, a fair system of morality, and an elaborate social order, while all the rest of the world was sunk in darkness, had no history, no settled government, and only the first germs of art and manufacture.

What, then, is the evidence upon which we are asked to accept this conclusion? A vague idea is afloat that the long Egyptian chronology is borne out by the Egyptian monuments; and even Professor Owen speaks of the "expanded ideas of time," which he entertains, as "deductions from lately-discovered inscriptions,"[1] as if the inscriptions were really the source from which the long chronology proceeds. But it cannot be too often repeated that this is not the fact. Nothing is more certain, nothing is more universally admitted by Egyptologers, than the absence from the monuments of any continuous chronology.[2] For the later portion of the history, the Apis *stelæ*, found by M. Mariette in the Serapeum,[3] which give the age of each bull at his demise, and the regnal year of the king or kings coincident with the bull's birth and death, furnish valuable chronological materials; but even these are incomplete, and for the earlier periods they fail entirely. All that the monuments supply for the time anterior to the eighteenth dynasty, consists of lists of kings,[4] unaccompanied, for the most part, by chronological data,[1] and all of them more or less imperfect.[2] These lists, moreover, were in no case compiled earlier than the time of the eighteenth dynasty, and they are thus but very slight evidence, even of the existence of the more ancient monarchs named in them. Moreover, they differ one from another very considerably, both in the names and in the number of the monarchs whom they place on record, and it is only by an arbitrary preference of one of them to the rest, or by a still more arbitrary amalgamation, that a continuous list of the kings composing the dynasties can be made out. The monuments for the most part determine nothing as to the length of a king's reign; they show some of the kings to have reigned conjointly,[3] but do not tell us to what extent this practice prevailed; and they leave wholly undetermined the question as to the extent to which kings of contemporary dynasties have been admitted into the lists.

The result, so far as the monuments are concerned, may best be stated in the words of Brugsch:[4] "The difficulties in the way of determining the epochs of Egyptian history, instead of diminishing, increase from day to day. . . . . Perhaps, if the Turin Papyrus had been preserved to our times intact, we should have been able to establish the ancient chronology of Egypt. But at the present day no living man is capable of overcoming the difficulties which prevent the reconstruction of the canon. We lack the elements necessary for completing the gaps, and supplementing the historical remains, more especially of the earlier dynasties, these remains being too few and far between to be made use of with any success. Moreover, it is certain that the lists of kings which have come down to us have been *cooked* to suit particular views."

The long Egyptian chronology has not, then, resulted from the monuments, and cannot base itself upon them. It has arisen, as Dr. Brugsch observes,[5] entirely from the trust placed in the statements of the Egyptian priest Manetho, or rather in those reports of his statements which have reached our time. According to these, the priest of Sebennytus, writing about B. C. 250, claimed for the precedent Egyptian monarchy an antiquity of between five thousand and six thousand years.[6]

Two questions here arise—1. Is Manetho correctly reported? and, 2. Are we bound to accept his statements as certainly true? In a former chapter it has been argued that there is a reasonable doubt whether the Egyptian priest really intended his thirty dynasties of kings, the sum of

[1] "Leisure Hour" May, 1876, p. 326.

[2] Stuart Poole says, "The evidence of the monuments with regard to the chronology is neither full nor explicit," ("Dictionary of the Bible," vol. i. p. 506); Bunsen, "History is not to be elicited from the monuments; not even its framework, chronology." ("Egypt's Place," vol i. p. 32); Brugsch, "It is not till the commencement of the twenty-sixth dynasty that the chronology is founded upon dates which are not much wanting in exactness" ("Histoire d'Egypte," 2me ed. p. 25); Mariette and Lenormant, "The greatest obstacle to the establishment of a regular Egyptian chronology is the circumstance that the Egyptians themselves never had any chronology at all" ("Manuel d'Histoire Ancienne," vol. i. p. 322).

[3] See his work, "Renseignements sur les soixante-quatre Apis trouvés au Sérapéum," Paris, 1855.

[4] There are five such lists. One is that of the Papyrus Roll, at present in the Turin Museum, and known as the "Turin Papyrus," which was edited by Sir Gardner Wilkinson as early as 1840; another, in stone, brought from the great Temple of Karnak, may be seen in the Bibliothèque Nationale at Paris; a third, also in stone, and known as the "Table of Abydos," is in the Egyptian collection of the British Museum; a fourth, known as the "Table of Sakkarah," forms a portion of the Khedive's collection at Cairo; the fifth, which has been called the "New Table of Abydos," is, I believe, still attached to the walls of the temple in which M. Mariette discovered it.

[1] The Turin Papyrus is the only one of the five lists which contains any numbers. It is thought to have given, in its original condition, the length of each king's reign; but the numbers are for the most part indecipherable.

[2] The Turin Papyrus consists of 164 fragments, and in some dynasties more than half the names are obliterated. The Karnak list contained sixty-one names only; of these twelve are lost, and the original list itself is regarded as a mere selection. The "Old Table of Abydos" has lost twenty out of the fifty names inscribed on it; the "New Table" is in better condition, but still is imperfect, and makes the eighteenth dynasty follow immediately upon the twelfth. The "Table of Sakkarah" has only fifty-eight kings, and, like that of Karnak, is regarded as a selection.

[3] See Brugsch, "Histoire d'Egypte," p. 83.

[4] See Brugsch, "Histoire d'Egypte," pp. 27, 28.

[5] Brugsch, having noted the remarkable diversity of views among the *savants* of Germany with respect to the commencement of monarchy in Egypt—a diversity (as he observes) of above 2,000 years—appends the remark, "Les calculs en question sont basés sur les chiffres contenus dans les extraits de l'ouvrage du prêtre Manéthon sur l'histoire de l'Egypte" ("Histoires," p. 24).

[6] See above, p. 23.

whose joint reigns amounted to above 5,000 years, to be regarded as consecutive, and in no case contemporary.[1] Only one modern *savant*[2] takes the view that they were really all consecutive. All the rest admit the principle of contemporaneity, and only differ with regard to the extent to which it prevailed. The "long chronology" depends on denying contemporaneity, or reducing it to a minimum. If it is the fact that five or six of Manetho's dynasties were at times contemporary,[3] his numbers might be correct, and yet the 5,000 years might have to be reduced to 2,000.

But can his numbers be considered correct? In the first place, there are three versions of them, no one of which has more external authority than the other two. In the second, where the monuments furnish any evidence at all, they contradict him frequently and vitally. Manetho gave to the three Pyramid kings reigns of sixty-three, sixty-six, and sixty-three—in all 192—years, or only eight years short of two centuries. The Turin Papyrus replaces these numbers by six, six, and twenty-four—in all thirty-six years, or less than one-fifth of Manetho's total.[4] Manetho gave to the predecessor of the second Menkeres a reign of forty-four years; the Turin Papyrus cuts the number down to eleven years.[5] Manetho assigned to the first Sesostris (of the twelfth dynasty) a reign of forty-eight years; the monuments give him, at the utmost, nineteen years.[6] Similar discrepancies occur in scores of cases, and the result is greatly to discredit Manetho's numbers as they have come down to us.

Supposing, however, that we could recover the original Manetho, should we be bound to accept him as an authority from whom there could be no appeal? Surely not. Manetho wrote about B. C. 280—250, or about 1,200 years after the accession of the eighteenth dynasty, about B. C. 1500. He professed to carry back the history of Egypt for some thousand or thousands of years before this. But what materials could he have for his history? Probably he had the same monumental lists which we possess, and others similar to them. He may have had access to the Turin Papyrus in its unmutilated state; he may have been able to refer to other documents of the same age. But there is no reason to think that he possessed contemporary memorials of the Middle or Old Empire, or knew anything more of them than the traditions which the monarchs of the eighteenth and nineteenth dynasties committed to writing, after a "shipwreck" of Egyptian civilization, in which all was lost. He could, it would seem, only have *guessed* the duration of the Shepherd dominion. The duration of the previous native empire must have been still more obscure. The Egyptians, when left to themselves, had "never had a chronology;" and documents like the Turin Papyrus, containing bare lists of kings with regnal years attached, could be of little value, except as showing what the monarchs of the nineteenth dynasty believed, or wished to be believed, as to the past of their country. Extant contemporary monuments might present in certain instances the names of the kings, but would be unlikely to show either which kings of a dynasty ruled conjointly, or which dynasties were contemporaneous. Copious remains, and a careful study of them, would have been needed to determine such points as these. The "shipwreck of civilization" immediately preceding the eighteenth dynasty caused the remains to be scanty; the intense egotism of the monarchs would be unfavorable to anything like careful study of remote history.

[1] Ibid. note.
[2] M. Mariette.
[3] As held by Wilkinson, Stuart Poole, and even Bunsen.
[4] See Brugsch, "Histoire d'Egypte," p. 48.
[5] Ibid. p. 50.
[6] Ibid. p. 83. Manetho is not always so greatly in excess with respect to his numbers; but on the whole he raises considerably the years of the kings' reigns, as given in the Turin Papyrus. That document favors the view that the average reign of an Egyptian monarch did not much exceed fifteen years.

Again, Manetho certainly failed to present a true version of the chronology subsequent to the eighteenth dynasty. Here Herodotus is sometimes more to be depended on than he.[1] But if the priest of Sebennytus could be mistaken in respect of this (comparatively speaking) recent period, is it not likely that he committed still greater errors with regard to times very much more remote?

Let it be further noted that Manetho's scheme of thirty dynasties of Egyptian kings, beginning with Menes, with reigns of which the sum amounted to between 5,000 and 6,000 years, was a part of a far larger scheme of mundane chronology which no one thinks of accepting[2]—a scheme whereby the beginnings of Egyptian history were carried back to a date *more than thirty thousand years* anterior to the Christian era! All moderns agree that the greater portion of Manetho's chronological scheme is untrustworthy; the dispute is only as to the point at which we may begin to place any reliance upon it.

Upon the whole, we see no reason to retract the views which we have already expressed on the subject of Egyptian chronology, which are briefly these:—1. That the eighteenth (native) dynasty commenced about B. C. 1,500;[3] 2. That the Hyksos, or Shepherd period of foreign domination lasted, at the utmost, about two centuries and a half,[4] commencing not earlier than B. C. 1750; and 3. That the native dynasties anterior to the Hyksos domination, many of which were contemporary, may have covered a space of 500, 600, or 700 years, thus reaching back to B. C. 2250, or possibly to B. C. 2450. In this way Babylon and Egypt would be, in their origin as kingdoms, about contemporary; the Pyramids would have an antiquity of about 4,000 years; civilization would have taken its rise in Egypt in the course of the third millennium B. C., and would have rapidly advanced in certain directions, as it also did in Babylon,[5] while in others the progress made was small;[6] the early civilizations of Phœnicia and Asia Minor would have followed on those of Egypt and Babylon, at no great interval; civilization would from the first have shown its tendency to spread and communicate itself; the earth would at no time have presented the spectacle of one highly-civilized community standing alone for thousands of years in the midst of races rude and unpolished; the progressive movement of civilization would have been upon the whole equable, uniform, and, if we may use the term, natural.

Such are the chronological views which profane history, monumental and other, studied by itself, seems to us on the

[1] For instance, Herodotus gives Neco a reign of sixteen years, Manetho one of six years only; but one of the Apis stelæ mentions Neco's sixteenth year. Again, Herodotus assigned to the Ethiopian dynasty, which Manetho makes his twenty-fifth, a period of fifty years. Manetho gave it forty (or forty-four) years. Mariette and Lenormant, presumably following the monuments, give to the dynasty a term of fifty years.

[2] Manetho's scheme was as follows:—

Dynasties of Egypt.

	Years.
1. Reigns of the gods	13,900
2. Reigns of heroes	1,255
3. Reigns of other kings	1,817
4. Reigns of 30 Memphite kings	1,790
5. Reigns of 10 Thinite kings	350
6. Reigns of Manes and heroes	5,813
7. Reigns of the 30 dynasties	5,000 (perhaps 5,075).
Total	29,925 (perhaps 30,000).

[3] B. C. 1520 (Wilkinson); B. C. 1525 (Stuart Poole); B. C. 1600 (Birch).

[4] See the arguments of Canon Cooke in the 'Speaker's Commentary," vol. i. p. 447.

[5] See above, p. 41.

[6] When Professor Owen says that the Sphinx of the Pyramids is a "sculpture of exquisite art and finish" ("Leisure Hour" for May, 1876, p. 324), and the statue of Chephren one "that will bear comparison with that of Watt, by Chantrey, in Westminster Abbey" (ibid. p. 325), I can only profoundly disagree with him.

whole to favor. We should maintain them had the Bible never been written, or had it been entirely devoid of all chronological notices.[1] But we think it right to call the attention of our readers, whom we presume to be believers in revelation, to the fact that these views, while irreconcilable with the wholly unauthorized chronology of Archbishop Usher, harmonize admirably with the Biblical numbers, as they are given in the version called the Septuagint.

We subjoin a tabular view of the chief chronological conclusions at which we have arrived in the course of this inquiry:—

	B. C. about
Date of the Deluge, according to the Septuagint	3,200
Rise of Monarchy in Egypt (probably)	2,450
" " in Babylon (probably)	2,300
Earliest traces of civilization in Asia Minor (probably)	2,000
Rise of Phœnicia	1,550
" Assyria	1,500
Earliest Iranic civilization (Zendavesta)	1,500
" Indic " (Vedas)	1,200
" Hellenic " (Homer)	1,200
Phrygian and Lydian civilizations commence	900
Etruscan civilization commences	650
Lycian " "	600

THE END.

GOD IN NATURAL LAW.*

I am to speak on the proofs from science of the Divine Omnipresence, or in support of the propositions:

1. That matter cannot originate force or motion.

2. That all force in natural law originates outside of matter—that is in mind.

3. That natural law is simply the fixed, regular, stated method of the Divine action.

The reasoning by which science arrives at the conclusion that the Divine mind can be absent from literally no point of space, is simple. It is very clear. It is very short. And one can comprehend it who will recollect what the commonest text-books mean when they teach that matter is inert, that is, that it can not move itself. I suppose that there is not a schoolroom in the land in which the elements of either physics or metaphysics are taught, where I could not to-day find primary books asserting the proposition that inertia as one of the properties of matter, is one of the first letters in the alphabet of established science. I am neither affirming nor denying the doctrine known as that of second causes. I assert only what is called among men of science, the spiritual origin of force. This is held both by those who affirm and by those who deny the existence of second causes. It is a doctrine in the support of which all accredited scholarship is agreed.

The first proposition, then, by which established science proves the Divine Omnipresence is that only two things exist in the universe—matter and mind. No one doubts that there is no third thing. We never saw, felt, heard or tasted anything which was not either matter or mind. The human thought finds by the microscope, among things near and minute, no evidence of the existence of anything which is not matter or mind; and by the telescope, among things distant and vast nothing which is not one or the other. Even the materialist who holds that only matter exists, does not doubt that there is no third thing, for he holds that there is no second thing. So the idealist who holds that only mind exists does not doubt that there is no third thing, for he holds that there is no second thing. We, who on the testimony of the necessary beliefs, hold that matter and mind both exist, do not doubt that there is no third thing. It is an immemorial proverb of philosophy that there is no *tertium quid*.

The second proposition is that matter is inert, that is, it cannot originate force or motion. We know mind as something which can move itself. We know matter as something which cannot. The boulders which we saw in the fields in our childhood, lie now where they did then, unless they have been moved by some power outside of themselves. We are as certain of this as we can be of any inference from universal experience. I do not assert that matter may not possess active chemical properties among its natural qualities. I assert simply that matter cannot *originate* force. What is force? That which is expended in producing or resisting motion. The definition which I venture to give of inertia is the capacity to originate force. Mind originates both force and motion. Matter originates neither. If matter possess force, it not only did not originate this force at the creation; it does not originate it at the present instant. All force and motion in matter must have at every moment their ultimate source outside of matter, otherwise matter can move itself; and that it cannot do this is a part of our positive knowledge. Very noteworthy is the fact that the latest and subtlest and yet superficial materialism like Tyndall's, which attributes to matter the power to originate force, does so and can do so only after it has given to matter a wholly new definition, and what is vaguely called a spiritual side. Professor Bain, however, who leads the acutest and most recent materialism, admits that matter is inert, and cannot originate force.

The third proposition is the conclusion from the two propositions that only matter and mind exist in the universe, and that matter is inert, namely, that all force and motion in matter must have, not only a past and remote, but a present and immediate origin in mind.

At what, then, do we arrive? The constellations are matter. Matter cannot move itself. But they move. They do not move by our mind's agency. But since all force originates in will, they must be moved by a mind. We begin to see the transcendent importance of the conclusion. The earth in infinite space sleeps on its soft-spinning axle. It is matter. It does not move itself. But it moves now and here with a force immeasurable by human imagination. Our globe's motion must, at this moment, originate in a mind. "It is but reasonable," says Sir John Herschell, "to regard gravity as the present effort of a will." We begin to see the unspeakable religious value of this doctrine of exact science. The spiritual origin of force is a scientific phrase which transfigures itself before us and begins to flame from within.

Two men are in a room; one is handcuffed and fettered; or, to make the comparison more complete, let us say paralyzed. Now, suppose some beautiful work of art is brought into existence in that room. It would be very certain that the work of art was made by the man who was not paralyzed. The universe is such a room. There are only two things in it, matter and mind. But matter is handcuffed. The works of art which the universe contains must be the present product of mind.

But the proof! the proof! The proof from science.

You have in your room, on the mantle, let us suppose, a clock and an ivy plant. The clock is a piece of skillful mechanism, in which every detail is designed with the purpose of effecting a measurement of time. But it is made of inert matter. Its component parts are wood, and brass, and steel. Did the clock put itself together? Certainly not.

But the ivy plant is a piece of mechanism. The toothed

[1] Professor Owen seems to imagine that the curtailment of Manetho's numbers is a device of "Biblical critics," bent on forcing his chronology into an agreement with that of Scripture. But the curtailment began with the heathen writers, Eratosthenes and Apollodorus, who lived under the Ptolemies in the third and second centuries before Christ.

*A lecture delivered at Chautauqua in 1877.

wheels of the clock are not as wonderful exhibitions of mechanical skill as its toothed leaves. The most intricate work in the clock is not comparable for an instant in point of ingenuity of structure with the cells, the endlessly reticulated veins, and bursting buds of the plant. But the ivy is made up of matter. Did it put itself together? Assuredly not.

But you say that the ivy grows from a seed, and the clock does not. Suppose that the clock were constructed with such wonderful interior mechanism that after running for a certain length of time it should put out through the apertures in the dial-plate little wheels, a minute chain and spring, a little dial-plate and little hands, and that these should be put into order by the machinery of the first clock, and form a complete miniature time-piece; and suppose that this little clock should then gradually enlarge until it attained the size of its parent. Would the fact that the clock thus produced another clock, make it any the less certain that it did not put itself together? On the contrary, the more wonderful its mechanism, the greater would be the certainty that it did not originate in any of the powers of inert matter. But the ivy plant does produce a seed, and in that seed are folded the miniature root and stem and plumule of a new plant. Is this fact any reduction of the evidence that the ivy did not put itself together? On the contrary, it emphasizes that evidence.

But you say that the ivy grows by natural law, and that the clock does not. I come here upon an objection turning upon the indistinctness of meaning attached in common speech to certain leading words. There is nothing, I believe, which does more to obscure the grandeur of the objects of science, and to fill the mind with the views of an indefinite materialism, than the vagueness, as ordinarily used, of the terms of "nature" and "law." What is a natural law? Or, rather, taking one part of the phrase at a time, let us ask, What is a law? The answer is that a law is the method of operation of some force. Now, what force is capable of producing this result which we call an ivy-plant? Evidently only a force possessing intelligence. But does matter possess intelligence? Various properties and forces have been attributed to matter, but since the world began, no philosopher of enduring reputation ever attributed intelligence and the power of choice to it. But, whatever else concerning it may be uncertain, one point is sure, that the force which is capable of producing the result which we call nature, must possess intelligence and the power of choice. That force, then, cannot reside in matter. It must reside in mind. It must at this instant, and at every instant, be exerted by mind. That mind is omnipresent in natural law. What then, is a natural law? It is, to speak literally and without figure, the present thought of the Deity. It is the method of action of the Omnipresent, Infinite Will. So that this ivy-plant, growing on the wall, is as really at this instant God's present work as a painting of the ivy growing before your eyes, on the canvas of a painter, beneath the pencil of the artist, would be the artist's present work. I believe this; I am not presenting poetry, but one of the deductions of exact science. "The universe," says Dr. Carpenter, "is not governed by law, but according to law." Darwin adopts as the motto of his "Origin of Species," Archbishop Butler's famous assertions that "the only distinct meaning of the word natural is stated, fixed, settled," and "that it as much requires an intelligent agent to effect anything statedly, fixedly, regularly, that is naturally, as to effect it for once only, or supernaturally."

I have supposed it to be objected, in the first place, that the ivy grows from a seed, and that the clock does not; and in the second place, that the ivy grows by natural law, and that the clock does not. It may be objected, in the third place, that, as the clock was made, wound up and allowed to run as a machine, so the ivy plant may have been made, wound up and allowed to run as a machine. As the impulse of the hand of the maker of the clock is not needed to move it, when once it is constructed and set in motion, so the impulse of the hand of the maker of the universe may not be needed, after it has once been created and set in motion. It then runs by its own laws, and is a machine. God is indeed, according to this objection, needed to create the ivy plant, and the universe; but, once created, they act without his aid, by the laws imposed upon them at the outset.

This objection, I need not say, is entirely irreconcilable with what we have just proved as to the nature of natural law. It is in conflict with the fundamental proposition that matter does not possess intelligence and the power of choice.

But there is another reply to the objection which causes the comparison of the universe to a machine to fall apart at every link. The clock does, indeed, run after the hand of its maker is withdrawn from it. But it runs by the operation of a law of gravitation existing outside of itself. The weights descend and the pendulum vibrates in obedience to that law. Nature is outside of the human machine, and is the force which moves it. No machine made by man has its motive power within itself. The mill-wheel turns under the weight of falling water, which the heat of the sun has lifted by the law of evaporation into the air, and the law of gravitation draws down again. A necklace of pearls, let us suppose, is sent from India to a European queen. It is conveyed upon railroads over which the natural laws of steam drag loaded trains. It everywhere moves in grooves prepared for it, and those grooves are natural laws. Now, the difference between nature and every human machine is, that every human machine runs by natural law which is outside of it, but there is no nature outside of nature itself for nature to run by. Outside of the clock is the law of gravitation, moving it; but outside of the law of gravitation is no second law of gravitation moving it. Outside of the mill-wheel is the falling water, itself the motive wheel; but outside of the wheel of the universe is no second wheel. Every human machine runs in grooves of natural law lying back of it. But nature, by its very definition, includes the totality of created things. There is nothing back of nature. Behind nature there is no second nature presenting grooves for nature to run by. You cannot send nature by express.

This comparison of the universe to a watch wound up and allowed to run, is a very old one; it expresses the theory underlying many of the vague popular conceptions of nature; in the last century it had a prominent place in some of the half atheistic speculations put forward in France and Germany. In the light of clear ideas it will not bear an instant's examination; and it is now everywhere abandoned by scholars. It is what Carlyle calls the idea of "an absentee God, sitting, ever since the first Sabbath, on the outside of His creation, seeing it go."

It may be objected, in the fourth place, that although the ivy plant is not a machine, and although the properties of the particles composing it cannot originate in matter, and must therefore be constantly upheld by the Omnipresent Infinite Will, yet these properties, when thus upheld, are enough to account for the structure and growth of the plant. In other words, although an Omnipresent mediate agency of the Infinite Will be proved, it does not follow that there is in nature any example of the immediate agency of that Will. God acts, it is said, only through the forces and tendencies of matter; His will touches the world omnipresently, indeed, in second causes, and these causes, without His will, cannot exist for an instant; but His will always operates through them; in no case does it touch the world naked and bare.

In this last objection we have the subtlest form of the ev-

olution hypothesis. As a short reply, let me say that evolution cannot be greater than involution. Every change must have an adequate cause. If a certain effect comes out of your process of evolution, an adequate cause went into your process of involution. Your loom picks out from raw material various parts, weaves them together and throws out a web. You know very well that there can nothing come out here that does not go in there. You say a peculiar pattern comes out. But it went in when the loom was made; and although you do not see the pattern there in the same form in which we see it here, yet in substance it is there in the arrangement of the parts of the loom and of the unwoven threads. Everything that comes out here goes in there. If anything comes out on the one side of the loom that does not go in on the other, then something has come into existence without cause. But every event must have a cause. That is a first truth. That is an axiom. That is an unalterable, self-evident proposition. Therefore we say that even if everything has been evolved, we know there is mind behind the process of evolution, because mind has been evolved in that process. You cannot draw out of evolution what you did not put in. I am an involutionist first and an evolutionist afterward. Of necessity, evolution implies an Evolver; a development a Developer. Just this is Darwin's proposition. It is Gray's. It is Dana's. Their teaching as to evolution does not at all annoy our confidence in the Divine Omnipresence, for God, if theistic evolution be the true explanation of all things, is omnipresent in the process of development. We read that there are states of the nervous system in which a man by an act of will can make a material object move without touching it. I have yonder a letter from a friend, and according to the statements of some men of science there is a possible condition of the will and of the nerves in which I can cause that letter to move towards me by merely willing that it should. I am no mesmerist, but there are curious facts concerning the power of human will over mere matter. Now, what if God mesmerizes all things? What if He fills the universe by the magnetization of Orion and the Pleiades and of these trees and of yonder great lakes and of all that moves and breathes and lives, as my little will fills that paper for an instant? Can you say that I am not in that paper? Can you say God is not in the universe, even if He is in it only in this way? What if natural law be only the magnetization of all matter by God's will? He yet was, and is, and is to come, omnipresent, first, midst, last. [Applause.]

But I wish you to remember that the word "collocation" is the Ghost which most frightens the evolutionary philosophers of the materialistic school. They say that the chemical and other properties of matter are sufficient to account for the way in which the hand and eye are put together, but this they never have proved. The latest form of evolution asserts that God makes the types, but that they print themselves without external aid. It admits that He marks on the different pieces of metal the letters of the alphabet; but it says that when He has done that His work is over. Chance has tossed up the alphabet in immense numbers of types. Chance has boxed them this way and that, and at last they have come down and printed "Paradise Lost," Homer's "Iliad," the Constitution of the United States, and the Declaration of Independence. [Applause and laughter.] God made the types; oh! yes; but the law of the survival of the fittest tossed them to and fro, and after an infinite number of hap-hazard falls they have printed you and me. Now that is what I call the topsy-turvy philosophy. You know Topsy said she "'Spected she growed." [Laughter.] The dicer's philosophy is a topsy-turvy style of accounting for the printing of the "Iliad," the Constitution, and yourself and myself. Let us test this scheme of thought by the scientific method, that is, by a merciless application of the self-evident truth that every change must have an adequate cause, and that involution, therefore, must equal evolution.

In the prairies yonder near Adrian, Michigan, the figure of a night-hawk is traced on the ancient verdant acres by the mounds of that unforgotten and unknown race which once may have peopled the lost Atlantic between North and South America. Over against this night-hawk there is outlined an Indian with a spear balanced at the bird.

When George Bancroft wrote the first volume of his history of the United States, it was not known that the Mound-builders had left traces of themselves in the Mississippi valley, and Bancroft asserted that there were no ancient ruins of man's work left on the shores of the Father of Waters. It was supposed that the swirl of the ice-bergs in some geologic period and the drifting of curious currents had made these mounds. What now if a man should seriously adhere to that theory, and try to explain the night-hawk and Indian by the fortuitous swirl of ice-bergs and waters? What if he should come forward and remind us that Newton taught that we must not multiply causes without necessity. It is barely possible the night-hawk and Indian might have been made in that way, and if it is possible we have no right to bring in the supposition of an intelligent agent. He quotes Hæckel, and something of Huxley. He can quote nothing of Charles Darwin, but he cites large name after large name to us, and if we are humble, average men, we may be startled and puzzled by his assertion, and yet we know that any man who should seriously believe that those figures were drawn by the fortuitous swirl of ice-bergs and the drifting of waters, ought to be sent to the lunatic ward, and this simply because he makes evolution insanely larger than involution. Here are intelligent results brought out, and somewhere mind must have gone in, for there cannot be a change without a cause, and a cause in which involution is equal to evolution. Here are intelligent traceries on the prairie, and, as intelligence comes out, somewhere intelligence assuredly went in.

But, my friends, if we believe this concerning the poor earthworks, what shall we say of the living night-hawk here in the edge of the evening, flying above the prairie, and of your Indian miraculously alive, pointing his spear at the bird. You know those traceries were produced by intelligence; but Huxley comes here, and Spencer and Hæckel, and, although Darwin stands there and objects, these lesser men, the extremists in the school of evolution, undertake to tell us that the living night-hawk came from one just behind him not quite like him; and that one from one behind him not quite like him, and so back to the jelly speck. Where did the jelly speck come from? Why, that came from the fortuitous concourse of atoms, or spontaneous generation. The first speck of really living matter arose by some turmoil of forces in a cooling planet. We must not multiply causes without necessity. *Entia non sunt multiplicanda sine necessitate.* What if I were to talk Latin here? I could convince you all that I am right. (Laughter.) There is an amazing capacity on the part of the average humble man to be mystified on this subject. We have a reverence for trained thought, and when with sufficiently numerous technical terms a specialist comes forward and tells you that the living night-hawk came at the last analysis from the swirl of ice-bergs and the drift of waters, you go away perhaps thinking that it did, and that God must be left out of sight. Now, for that *you* ought to be sent to the lunatic ward! (Applause and laughter,) and for the same reason for which you sent this other man there, namely, that you are adopting a theory which will not account for evolution by involution, and which asserts in the last analysis that there *can* be a change *without* an adequate cause, or that the fountain can rise higher than the source!

Descartes said: "I think, therefore, I am a person. And I must have been brought into existence by a being at least as perfect as I am, for the fountain cannot rise higher than the source." He was true to the axiom that every change must have an adequate cause. As he felt conscious of being a mind, a will, and a heart, he knew that somewhere in the universe there must be a cause as a source, at least as high as this fountain. If you have any lofty conception of what is possible in future history, if you find your souls capable of imagining what you call perfection, then there must be in the universe somewhere perfection at least greater than you can imagine, otherwise your fountain rises higher than the source, and so there must be a being better than any being imaginable to man. Now that I hold to be the present posture of Charles Darwin. This is not the posture of the materialistic and atheistic evolutionists, but it is the posture of Dana and of Gray, and of Owen, and of nearly every man who can be called an exponent of established as contradistinguished from disestablished science.

I can account by merely chemical force for the fact that a certain number of atoms of oxygen and hydrogen when brought together, will unite and constitute water, but those chemical forces have no tendency to bring atoms together in just the proportions needed to cause them to unite. That is the difference between merely chemical forces and the force of co-ordination. Chemical forces, when the particles of matter are arranged, take hold of each other and produce important results. But the particles must be arranged first. Your quill will write when there is a hand behind it, but the fact that it can write when held and driven, is not a proof that it holds and drives itself, or that it sharpens itself. (Applause.)

Say what we will of the forces and tendencies of matter, it cannot be made clear that these forces and tendencies, although upheld by Infinite Will, account for the adjustment and collocations of matter in those works of nature in which the structure indicates an intelligent designer. A German professor once to illustrate this very proposition, took a book and tore it into shreds, and threw down the pieces at his left hand. He then took an uninjured copy of the same volume and put it at his right hand. "Now," said he, "young gentlemen, is not the same book here and there?" "Yes," said they. "No!" he thundered. "What is the difference?" "We do not see much difference." "Collocation," was the impatiently emphatic reply. You have here indeed the same type, you have the same pages, you have the same paper, but everything is in shreds here, everything is in chaos, and there you have everything intelligently arranged. Now, the fact for which materialism and atheism, and for which the atheistic and materialistic school of evolutionists can never account, is collocation, or how the disarranged chaos is put together into the intelligible book of God which we call nature. (Applause.)

Matter does not possess intelligence. It does not build cylinders, and joints, and cells, and husks, and barbs, all pointing to one design, the production of a plant bearing seed and perpetuating itself. While, therefore, we admit that God's will acts omnipresently in the forces and tendencies of matter, we must recognize the fact that there are phenomena in the collocations and adjustments of matter for which those forces and tendencies will not account. In the former case we recognize His mediate agency; in the latter, His immediate.

I know how awful this conclusion is. I must not leave it without at least naming a few of the great authorities in science and speculative thought by whom it is asserted.

There are four forms of what is called the doctrine of Second Causes, which it is very important to distinguish from each other.

1. The mechanical theory, that the phenomena of the material universe are the result of powers impressed upon matter at its creation, and which operate without any present agency of the Deity.

2. The theory that all the phenomena of the material universe are produced by the forces and tendencies of matter as upheld by the Infinite Will.

3. The theory that all the phenomena of the material universe are produced by the forces and tendencies of matter as constantly upheld by the Infinite Will, except the adjustments and collocations, which are produced immediately by that Will.

4. The theory that all the phenomena of the material universe are produced by the immediate agency of the Divine Will.

The first and second of these theories are refuted. It is the third which I have asserted. It is but justice to the theme, however, to say that the fourth, which goes even farther than the third, though it does not, like the third, receive the unanimous support of scholars, is yet asserted by a large body of the most respectable authorities. This theory, which affirms that all the phenomena of the material universe are the result of the immediate Divine agency, denies the existence of second causes. The great name of Dugald Stewart is prominent in the list of the defenders of this doctrine. It was favored by Reid. It was asserted by Malebranche. It was defended by Berkeley, and Samuel Clarke. It was favored by Isaac Newton. In New England it was the doctrine of the theologian, Emmons. It is to-day elaborately taught in Harvard University in a standard textbook on metaphysics and ethics by Professor Bowen.

Of course all these authorities which assert the fourth proposition I have named, are authorities for the third. If the fourth, which asserts universal immediate Divine Agency, be true, the third, which asserts a partial immediate Divine Agency, and is thus included in the fourth, is true.

But I am not aware of a single authority of weight which does not affirm the third proposition. The work of Dr. McCosh on "The Method of Divine Government," is a recent careful defence of the doctrine.

At Andover Theological Seminary it is elaborately taught by Professor Park that second causes exist, but that they are everywhere upheld by the Infinite Will, and that first and second causes, though distinguishable in thought, are inseparable as things.

I quote a single sentence from the manuscript of a lecture of President Hill, of Harvard University, which it was my fortune to hear: "Looking thus at the Divine Being as the Lord who has consciously expressed his thoughts in the material world, that world becomes glorified, and glows with heavenly splendor. Science becomes the study of the autograph works of the Infinite God; and natural history, which is the highest of the series of physical sciences, and links them to the sciences that deal with the human mind, becomes the means of communion with the highest geometrical, algebraical and chemical thoughts of the Father of men, which He has as yet revealed to us." Professor Agassiz, who was present at this lecture, was heard to say emphatically, as the audience were leaving the room: "That truth is not more great than sure."

> "God of our fathers, Thou who wast,
> Art, and shall be, when the eye-wise who flout
> Thy secret presence shall be lost
> In the great light that dazzles them to doubt,
> We, who believe Life's bases rest
> Beyond the probe of chemic test,
> Still, like our fathers, feel Thee near." —*Lowell.*

> "God is law, say the wise; O Soul, and let us rejoice;
> For if he thunder by law, the thunder is yet his voice;
> Speak to Him, thou, for he hears, and spirit with spirit may meet,
> Closer is He than breathing, and nearer than hands and feet." —*Tennyson,*

THEISM AS A SCIENTIFIC HYPOTHESIS.*

I ask your attention in this lecture to the superior merits of Theism as an hypothesis for the explanation of Nature. Notice that the hypothesis, while perfectly sufficient, and, to say the least, *a priori* as credible as any, is vastly the simplest, the surest, the safest, the sublimest, and the most in accord with the convictions and traditions of mankind, especially of the most enlightened and moral part of mankind. Some of these particulars may appear at first sight to address themselves solely to the taste and interest: I trust they will be found to appeal to the reason as well.

The Theistic Hypothesis is perfectly sufficient.

It is plain that a Being of power and wisdom indefinitely beyond the human can completely account for all the wonders of Nature. Nothing could be plainer. A child can see it as well as the sage. The most exquisitely fashioned man, the noblest astral system, the aggregate of the amazingly varied organisms that crowd the earth and spangle the sky—a God is abundantly equal to the production of them all. There is absolutely nothing which such a Being cannot do with the greatest ease. He has skill enough to contrive the most exquisite things, power enough to accomplish the hardest things, and comprehension enough to triumph with these attributes over the largest fields of being which observation has examined or thought conjectured. As an explanation of Nature, the Theistic hypothesis could not be improved. The hardiest assailant would scarcely dare question its perfect sufficiency.

The Theistic Hypothesis is, to say the least, a priori, as credible as any.

The various hypotheses to account for organic Nature are as follows: First, natural organisms, as individuals or races, are eternal. Second, they were constructed by chance. Third, they were constructed by law—that is, by blind material elements acting in obedience to the eternal laws of their natures. Fourth, they were constructed by God.

The first two suppositions are too openly in conflict with observation and science to find any supporters in this age. No one now supposes that the individual plants and animals which he sees about him have always existed as such. That tree, that brute, that man—each of these individuals self-existent, imperishable, eternal! All the senses of all men are against it. They protest in a thousand ways that such organisms begin and flux and dissolve with every passing day. Equally plain is it that the races began—as plain as the igneous and metamorphic rocks, and the alphabet of geology.—As to a man, or even a blade of grass, becoming constructed by a strictly fortuitous concourse of atoms, such epicureanism is now out of date by many centuries. Chance—no person of culture at the present day believes in such a thing! Nor is it Argyle alone who believes in the reign of law. The schoolboy or the schoolless peasant does it as well as the cultured noble. All persons among us now understand that every atom has its essential properties and laws, which, together with those of other atoms and agents, spiritual and other, determine all its doings and experiences. The very idea of hap-hazard died and was buried at the incoming of modern science; and every new inquiry into Nature heaps new measures of dust on the grave. So we may put aside the two hypotheses first named. The comparison lies wholly between the last two—between that of construction by law and that of construction by God. Which of these has the best claim on our favor?

Let us observe, in the first place, that the hypothesis of construction by God is, to say the least, fully as credible, on its face, as its rival. Of course a person is perfectly credible; for we know millions of such beings in actual existence. Of course a person producing organisms, and very elaborate organisms, is perfectly credible; for we know millions on millions of persons actually doing as much. An eternal and practically infinite personal constructer of organisms is a more difficult conception, and further removed from our experience; but not more so than the eternal and practically infinite material constructer of organisms which the law hypothesis assumes; for it assumes what is really a material God—an eternal assemblage of blind atoms with properties in the aggregate fully equivalent, so far as production of results is concerned, to that personal power and wisdom indefinitely greater than the human which the Theistic hypothesis ascribes to God. Indeed, the construction of organisms by an intelligent agent is wonderfully more conformed to experience, not to say reason, than the construction of such organisms by mere blind matter.

We have no conceded instances of the latter construction, while we have innumerable conceded instances of the former. Men do plan and execute watches, telegraphs, sewing-machines, pin machines—machines beyond count. This is matter of absolute knowledge. It is universally granted among those who believe in knowledge at all. But construction by mere blind force, is not granted—especially construction of intelligent and moral beings. Only a very few imagine such a thing proved at all, and they in only a few instances, and that rather as a possibility or a presumption than as a demonstration. And just think of it. A mist of blind elements blindly shaping itself, not only into an infinity of useful and admirable objects—and such only—like plants and animals, but also into intelligent and moral beings; into statesmen, philosophers, and saints; into Napoleons, Miltons, Newtons, Howards; in fine, into such books as the Principia or Paradise Lost—for the author cannot be less wonderful than his works. What says an unsophisticated mind to the idea of matter, under blind forces and laws, shaping itself into the Iliad, or the Mecanique Celeste, or the mosaic portraits of the popes that look down so marvelously in long order in the Roman St. Paul's? Why, the very idea gives a shock to the understandings of most men! It seems like an insult to their intuitions. It seems to defy their common sense and knowledge of Nature. Blind causation do such things! To say that the conception is hard, far-fetched, unnatural, is not enough. It looks vastly preposterous. It begs like Demosthenes to be considered a self-contradiction. The man who accepts it instead of Theism, has wonderfully the appearance of one swallowing a camel after straining at a gnat. Blind causation do such things—it seems a feat a hundred fold more wonderful than any ever attributed to a personal God! Really, the hypothesis of construction by law is, on its face, greatly less credible than that of construction by God.

The Theistic Hypothesis is vastly the simplest.

Each hypothesis, considered as an explanation of Nature, consists formally of two parts—first, certain assumptions; and, second, certain considerations to show that these assumptions, in connection with known principles, will explain Nature. In the case of the Theistic hypothesis, the first part consists of the supposition of an eternal Being with power and wisdom indefinitely greater than the human, while the second part is nil—no considerations whatever being required to show that such a Being can account for the whole hight and breadth of Nature.

Not so with the law hypothesis. Here the two parts are much less simple, being in fact two very generic and complicated schemes of suppositions and arguments; one called the cosmical hypothesis for explaining the origin of worlds, and the other called the physiological hypothesis for explaining the origin of the living organisms on this world. The leading suppositions of the general scheme are as follows:—

1. An eternal substance, namely, matter.
2. An infinite number of eternal substances, namely, countless material atoms having independent existence.
3. An eternal and infinitely complex scheme of exquisite relationships between these countless, eternal, independently subsisting substances.
4. These exquisitely correlated atoms tenuously diffused as a gas or mist.
5. This mist vastly larger than a solar system.
6. This mist on fire.
7. Currents in this mist, obliquely toward the general center of gravity and nucleus of condensation.
8. Several minor nuclei of special condensation distributed through the mass—each with its own system of oblique currents.
9. All these nuclei such in size, place, and number, as to harmonize with the conditions of stable equilibrium in a solar system. I call particular attention to this last most voluminous assumption.

These are only a part of the assumptions included in the law hypothesis—merely leading specimens. You observe that the infinite and eternal enter quite as largely into this scheme of explanation as into the other—indeed more largely—while there is no comparison between the two schemes as to number of assumptions.

But, allowing these numerous assumptions, it does not intuitively appear from them, as it does from the assumptions of the Theistic hypothesis, that they will explain Nature. Arguments are necessary. No small amount of them is necessary. The arguments to show that the foregoing postulates, with the help of known laws of matter and principles of science, are adequate to explain natural organisms, may be arranged in three classes:—

First, certain arguments to show that all the worlds composing our solar system, and the leading features of each world, may be natur-

*By Rev. E. F. Burr, D. D., in Pater Mundi.

ally derived from the foregoing data. These arguments are long and intricate; and when duly spread out, make a volume.

Second, certain arguments to show the possibility of spontaneous generation of the lower forms of organic life. These arguments are long and intricate; and when duly spread out, make a volume.

Third, certain arguments to show the possibility of transmutation of species by gradual natural development of these lower organisms into higher forms, and at last into intelligent and moral beings. These arguments are long and intricate; and when duly spread out, make a volume.

Now, granting that the two schemes of explanation are, in the last result, equally good at accounting for Nature, you observe that one is a vastly more complex plan of explanation than the other. With elements fully as difficult, one consists of many parts—the other of few. With elements fully as difficult, one requires volumes to unfold itself fully—the other requires only a few words. Need I ask which is the more philosophical? It is an immemorial and indisputable canon of philosophy to accept the simplest explanation of facts.

We have taken the law hypothesis in its usual form. If any one thinks it may be made more simple by supposing more and arguing less, let him try. Let him reduce the second part of the hypothesis to zero by introducing the following comprehensive supposition into the first part. Suppose those eternally correlated atoms to have an efficiency practically infinite—to have forces and laws which as a whole are fully equivalent, so far as results are concerned, to that power and wisdom indefinitely greater than human which the Theistic hypothesis ascribes to God—to have forces and laws which are of themselves able to bring the atoms together into all the exquisite organisms that we see, up to intelligent and moral beings.

Of course, to grant this supposition is to grant everything. No need of any argument to show that such an hypothesis will explain nature. But is such an hypothesis plainly allowable? Does it assume only what is plainly possible? All the assumptions of the Theistic hypothesis are assumptions of what in the nature of things are evidently possible—an eternal person, this person indefinitely superior to man in wisdom and power. But this last assumption of the law hypothesis is a very different matter. To take for granted that a mist of atoms, by virtue of any blind properties whatever, can arrange itself into that infinite variety of exquisite organisms—and nothing but exquisite organisms—that we see, is taking for granted a great deal; is taking for granted what one may well be pardoned for doubting. The possibility of such a thing needs mightily to be shown. It needs to be shown that astonishing solar systems can result from mere natural forces and laws; that spontaneous genesis of organic life in some low form can occur; that there may be a natural development of this low form, through transmutation of species, into the most wonderful men. The possibility of all this needs not only to be shown, but to be shown to a demonstration; since all the assumptions of the rival hypothesis are possible to an absolute certainty. It is self-evident that there is some eternal substance, and that an eternal person is, in the nature of things, just as possible as eternal matter—self-evident that there is nothing in the nature of things to limit an eternal intelligence to a given breadth of knowledge and power—self-evident that there is nothing to prevent that intelligence from being as much greater than men in these respects as man is greater than a worm. Thus in the Theistic hypothesis. So everything in the rival hypothesis must be put on a basis of absolute certainty. That profuse argument, drawn out through volumes, which undertakes to show the possibility of a cloud of blind atoms doing the work of an infinite God must be made as strong as Euclid. Every link in that long chain of evidence must be forged by some Vulcan in the smithy of geometry. On this plan of exhibition, the law hypothesis will be quite as complex as on the other plan. On both plans it is a most cumbrous machine for its purpose—wheels within wheels in most unnecessary and perplexing maze. It is the first rough effort of the inventor compared with the instrument when, at last, simplified into a tithe of its original size and expense by the labors of many years and many rival ingenuities. It is the long, rambling, tedious process of some unfledged geometer compared with the swift and laconic algebra of LaGrange. It is the Ptolemaic system of Astronomy compared with the Copernican—the vortices of Descartes compared with the Newtonian principle and law of gravity. What manufacturer now uses the first spinning-jenny of Arkwright? What mathematician now works at his daily investigations with the ancient synthesis rather than the modern analysis? What astronomer now explains the heavens according to Ptolemy? Cycles and epicycles and deferents and eccentrics piled on each other—who does not bless himself that he is well out of this tangled wilderness into the grand simplicity of the Copernican theory? With a true philosopher, nothing but the clumsy manifoldness of the old system, as compared with the new, is needed to secure its emphatic rejection. Could it explain all astronomical facts equally well with its simpler rival, it would still fail of countenance for a single moment, as being essentially unscientific. So should fail of countenance that complex and cumbrous law hypothesis which is the Ptolemaic system of natural theology. However successful it may prove in accounting for Nature—though it should leave nothing to be desired in respect to clearness and certainty of result—it ought to be summarily rejected as being a tedious Chancery and Circumlocution Office. What traveller rides with a fiftieth or even a fifth wheel to his carriage? What American, seeking merely New York, goes by way of Pekin?

The Theistic Hypothesis is vastly the surest.

It is perfectly certain—certain to the apprehension of all mankind—that the hypothesis of a God will account for all natural wonders.

Can as much be said in favor of the hypothesis of construction by law? Is its adequacy intuitively certain? Or has that adequacy been rigorously demonstrated, level to the apprehension of all the world? No one claims it. No one dares to claim it. Great effort has been made. Great ingenuity has done its best. Years of argument have piled themselves on years, and still the argument rages. With what result? The great majority of thinking men are as unconvinced as ever. They do not even find a modest probability in the scheme so laboriously commended to them. And even its best friends hardly presume to call their own arguments a proof, much less a demonstration, much less still a demonstration that can be universally seen to be such. A certain amount of philosophic credibility, or, at the most, probability, is all that such men seem to themselves to have accomplished by their long and intricate dealings in behalf of spontaneous generation and transmutation of species by natural development; while to most persons the whole scheme is a hopeless fogbank—very picturesquely constructed perhaps, and displaying not a few showy battlements and pinnacles and prismatics—but still mere unsubstantial and uncertain air-castles, liable to change shape and even disappear at any moment. And yet, to put their scheme on as good footing as the Theistic, its ability to explain Nature must be made a matter of absolute and immeasurable certainty to the gaze of all plainest understandings. For, from sunrise to sunset, and round to sunrise again, there is not a person capable of understanding the proposition who does not know, to absolute perfection, that an Infinite Being could produce with perfect ease the noblest and all things that make up the beauty and majesty of Nature. It is as much an axiom to the child and the savage as it is to the sage. So a heavy demand is made on the friends of the law scheme. It is not enough, should we find ourselves unable to prove positively that this scheme is insufficient to explain Nature: its friends must show to utter certainty that it is sufficient, and show it to the complete satisfaction of all respectable inquirers. A hugely contested probability, timidly accepted as such by a few respectable reasoners, will not answer. Euclid himself must not be more conclusive, nor his axioms plainer. To secure this, all the parts, scores in number, of the very complex scheme, must be put on the footing of geometrical axioms. You must do it for all parts of the cosmical argument. You must do it for all parts of the physiological argument—for the spontaneous generation, for the transmutation of species, for the development of the oyster into the Newton. Not a single point in the voluminous scheme must be left to rest on mere probability. Should absolute demonstration halt at a single one of these points, or at any one of them fail to flash conviction like a sun on the most limited of sound understandings that chances to glance thither, the whole hypothesis would break down as a demonstration. Of course, such a Cesarean, all-conquering proof, is not only unaccomplished, but unaccomplishable. Not an instance of it can be found in the whole kingdom of logic.

A man who, reduced to choose between two secular hypotheses in other respects equal, should choose the one whose adequacy to account for the facts is, almost unboundedly, the most questionable, would not be considered the wisest of men. Suppose you meet an English friend in yonder street. "How came you here?" you exclaim. He informs you that he came either by steamer or by artificial wings. Have you any difficulty in choosing between the two explanations? You can decide the case swift as the flashing light, and with the momentum of a planet. And why not? You certainly know, as does everybody, that a steamer is adequate to bring the man across the Atlantic; but you do not certainly know that artificial wings can do such a feat. Very far from it. What you know is that the possibility of such a mode of transit for men is extremely doubtful, to say the least. Some ingenious things can be said in its favor—witness Ras-

selas—but to most persons the very idea is very ridiculous, and to none is it more than plausible. So you have not a shadow of hesitation. Instantaneously, your mind flashes its decision. Between the hypothesis whose adequacy is perfectly certain, and the hypothesis whose adequacy is, to say the least, extremely uncertain, you have no occasion to linger. You take the immeasurably surer hypothesis immediately and as a matter of course. Your friend did not, Daedalus like, transfer himself across the seas by means of a pair of wings deftly fastened to his shoulders.

The Theistic Hypothesis is greatly the most salutary and safe—salutary for the present life, and safe as to another.

It is easy to see that the recognition of a God, carrying with it, as experience shows it generally if not always will, a recognition of His righteous government—certainly of the possibility of it—has greater tendency to restrain from misconduct and to stimulate to virtue than has atheism. This from the nature of the case. And experience accords. It lies on the very surface of life and history that Theism is better than atheism for the character, the happiness, and the general outward prosperity of communities and families and individuals. Such has been the teaching of my own observation and reading on this point, that I am free to say that I had rather have my child worship in faith some respectable Brahma or fetich than to have him altogether without a God. So felt the ancients, though with but a small part of our experience. Plato would have atheists exported far from his republic as being a public danger. He would have their children taken from them, and brought up as orphans at the public charge. And the words of Cicero to the same effect have become famous. "That such views are useful and necessary, who will deny, when he reflects how many things must be confirmed by an oath, how much safety there is in those religious rites that pertain to the solemnization of contracts, how many the fear of Divine punishment keeps back from crime; in short, how sacred and holy a thing society becomes when the immortal gods are constantly presented both as judges and witnesses." So spake classic antiquity. And modern times, with their larger scope, venture to speak still more strongly. To them Theism is like a certain geode but recently found. To them Theism is like a certain flower just now becoming naturalized in our conservatories. The stone was broken, and lo, it was lined with beautiful crystals, and in the heart of that rich casket a still richer crystal in the form of a cross! Some delicate petals of the Flos Sancti Spiritus are drawn aside, and lo, nestled in that fragrant bosom, looks forth what seems a milkwhite dove! Such are the contents and implications of Theism—things most fair and wonderful to see. Behold altars and homes and commonwealths—behold orders, proprieties, safeties, philanthropies, steadfast consciences, regulated freedoms, and durable civilizations—behold usefulness and happiness and hope and virtue in their most snowy and effulgent forms—behold, as I think, the Cross and the Holy Ghost! All these are seminally contained in the Doctrines of God. It travails in birth with these for all the worlds.

Whichever hypothesis is honestly accepted will be measurably acted on. If that of a God is accepted, experience shows that with it, in general if not always, will be accepted His character as a righteous moral Governor. Supposing men to act on the supposition of such a God, it is certain that no grave harm will come of the action in any event, while it may open on the soul the gates of eternal life. But if men act on the supposition of No-God, they may be ruined remedilessly in case there is such a Being. Nearly all theists claim it will be so; a very plausible revelation affirms and reaffirms the claim in the most positive manner. And certainly, very severe results are by no means improbable. For, if there is a God, it is exceedingly important that men should know it; and if He is righteous—as certainly is not improbable—He greatly desires them to know it, and has given them suitable means for knowing, and so will be severely displeased with their atheism.

It would obviously be irrational to choose the least useful and safe of two hypotheses in other respects equal. No man in his senses would advise such a step in secular matters. It would be alike an insult to interest and to truth. I say, it would be a libel and outrage on truth—that Divine principle which is only inferior in beauty and majesty to virtue itself, and which is universally allowed to deserve the love and homage of mankind. Usefulness and safety are near of kin to truth. They are its natural associates. Where they are found truth is likely to be found. They are the surface indications of the gold mine—the Geology that divines of it so strongly that men hopefully gather great capital about the spot where trembles her rod, and set to work. If observation shows anything, it is that the most salutary and safe course is usually the one accommodated to fact: and indeed such a course cannot in general be that which is accommodated to a falsehood. From the nature of the case, courses accommodated to a falsehood, and so in positive conflict with the real nature and relations of things, must in general be attended with more difficulty, expense, and damage than those in harmony with such nature and relations.

The Theistic Hypothesis is greatly the fairest and sublimest.

Other things being equal, the fairest and sublimest hypothesis has the best claim on us—on our faith as well as on our affections. It has most the aspect of a truth.

Soul—whether regarded as an immaterial substance, or simply as the sum of certain qualities occasionally found in connection with certain organic forms—soul, with its will, feeling, intelligence, and capacities for happiness and virtue, is universally felt by thinking men to be the highest as well as the most mysterious sort of known being. Not the grandest masses of matter; such as mountains, oceans, stars—not the most subtle and forceful material elements; such, for example, as produce the phenomena of light, electricity, and gravitation—not any conceivable combination of such elements, can compare in wonderfulness and nobleness with the soul of a Newton. Much less can any conceivable combination of such causes compare in these respects with an Eternal and essentially Infinite Soul that devises and produces all natural organisms, and is capable of governing them and all things with infinite wisdom and goodness. If, in addition, we suppose this great Being crowned with the glories of an infinite and everlasting actual felicity and virtue—as we are entitled to do for aught that appears to the contrary—a goodness efflorescing into every imaginable beauty of hue and form; a goodness bathing the whole Divine Nature in the rosy lights of an unutterable tenderness and mercy and love, whose warm floods overflow to the remotest terms of the creation, and insure to it the utmost possible measure of blessed results—what shall we say of such an Object? It makes the heart leap to look toward it. Never such a scene blushed under eye of traveller or pencil of master—never such sumptuous palace or cathedral reared its wilderness of comeliness and majesty on the sight or dreams of men—never such mountain-range gathered clouds and rainbows about its brow and blossomed o'er all its mighty sides with the beauties of every clime—never such central sun blazed and triumphed and governed amid its coronet of rejoicing worlds! O wonderful Vision, O Colossus of perfection, O worthy and worshipful Emperor of Nature, O fairest and sublimest Idea in the whole empire of thought! One may well be excused for preferring, other things being equal, such an hypothesis as this. It has the most claim upon him. What should we think of a man who, being reduced to choose between two hypotheses equal in every other respect, should choose the meanest and hardest-favored of the two? It were an insult to truth. It would do violence to the subtle instincts and proprieties of Nature. It would affront the "beautiful and fitting" of science.

The Theistic Hypothesis is greatly the most in accordance with the convictions and traditions of mankind, especially of the most enlightened and moral part of mankind.

You could almost count up on your fingers the men who, leaving the attitude of mere doubters, have come to positively affirm and positively believe that Nature was actually produced in conformity with the law hypothesis. On the other hand, those who so positively and firmly believe in the Divine origin of Nature that they could freely die for their faith are almost innumerable. I would like to see the man who could die for the law hypothesis!—Further, the Divine origin of Nature is the strong popular faith of whole nations and generations, constituting the most intelligent and best-behaved part of the race. Much of this faith, indeed, is not that of martyrs; but most of it is a faith that shudders at the very name of atheist, and at the very idea of a godless universe. And the Jews, the Christians, the Mohammedans, the Hindoos with their affiliated races—to say nothing of smaller peoples—the believing nations covered by these names include in their mighty circumference nearly all the science and civilization and semi-civilization and respectable morals the world can boast—Further, the whole body of mankind, past and present, with a few trifling exceptions, firmly believe in at least one Great Intelligence of a grade indefinitely superior to the human and worthy of worship. Every nation has some divinity. There is no country without temples, altars, priests. In all climates, under all governments, through all stages of society from the most barbaric to the most cultivated, man humbles himself before great invisible personal powers. The traveller into unexplored countries about as much expects to find them supplied with deities as he expects to find them supplied with men. The traveller into distant ages, whatever direction he takes, about as much expects to find men worshipping as he

does to find them eating and drinking. Whether Livingstone or Humboldt—he encounters the supernatural at every step. Whether Niebuhr or Muratori—at every step he meets the immemorial traditions of the supernatural descending upon him like Amazons from every point of the compass. The cultus is everywhere. And whether it points at the fetich, or the idol, or the star, or the Grand Lama, or Brahma, or Boodh, or Odin, or Osiris, or Jupiter, or Allah, or Jehovah—it expresses the faith of all nations and ages in at least one Great Superhuman Intelligence who holds sanctuary within such holy names, before whose power and wisdom the greatest of men should uncover, and from whose undefined and dreamy greatness one should not be surprised to see issuing any conceivable wonders. I use universal language. It is because the dissenters from this generic Theism are so few as to be absolutely inappreciable in the presence of the empires and continents and generations who hold it with a profound and ineradicable faith.

What means this great Plebiscitum? What means this universal faith in at least one Worshipful Superhuman Intelligence—this chain of such faiths stretching away back into the mists of history and even the adyta of primeval tradition—this chain ever expanding toward Christian Theism as it passes through the more enlightened times and lands? If any man says that it means nothing, or that it does not flex itself significantly in the direction of God, my eyes dilate upon him with astonishment. Is he serious? Does he mean what he says?

It cannot be denied that universal and very ancient beliefs have sometimes proved false; but still it is acknowledged in practical life that they are generally true, and are always to be accepted as true in the absence of all positive evidence to the contrary. For example, if it should be the universal speech in this community that a certain person is dishonest, one would not, anterior to a thorough investigation, trust him as quickly as though there were no such common fame; especially if that common fame had existed for many years, and was fully indorsed by his most intimate acquaintances—proving that it is viewed as of the nature of evidence. It is possible that the man has been belied, for many instances of such belying have been proved; but still that universal faith against him is one of the adverse probabilities needing to be off-setted and overcome by other probabilities. In the absence of all discoverable positive evidence to the contrary, the universal and stable belief would be considered decisive against the man for all practical purposes, and ought to be so considered. Is there any positive evidence that there are no superhuman intelligences? On the contrary, are they not rather favored by the fact of numerous orders of living beings below us in a long line of gradation down to microscopic life? What authority has man for saying that the long line in its ascent ends with himself, or ends anywhere short of a Being of infinite proportions as compared with ourselves?

Further, there cannot be shown an instance of dateless and universal belief which has maintained its ground without abatement amid all advances of knowledge and morals, and which has even been enhanced by such advances, proving false. The false belief that the sun moves around the earth was universal at one time; but as knowledge increased this sort of astronomy weakened and passed away. The false belief in astrology, in the lunar influence on the weather, is very ancient, and has had almost universal acceptance; but it has faded before advancing intelligence. The false belief that it is lawful to worship many deities, and to represent deity under material forms, was for ages well-nigh universal; but wherever at any time knowledge and character have improved, polytheism and idolatry have shown tendency to decline. See, for proof, the French Positivists. But French Positivists were hardly needed to prove this to any moderate reader of history. The chief Greek and Roman philosophers seem to have always lived on or within the verge of Monotheism, spiritual Monotheism; and the more learned and better class of Brahmins at the present time, when drawn into explanations, take up very much the same position. On the other hand, this dateless and universal belief in at least one Superhuman and Worshipful Intelligence has not been injured anywhere by a combined advance in knowledge and character; but the reverse. The Mohammedan nations, as such, believe as strongly as the pagan—the Christian nations, as such, as strongly as the Moslem—the most advanced Christian nations, as strongly as the least advanced. So far, indeed, from this belief declining with advancing intelligence and virtue, it shows in such case a general tendency toward a more refined and stupendous Theism. Osiris, Jupiter, and Brahma, are far greater deities than any worshipped by African or South Sea savages—the Theos and Deus of such philosophers as Socrates, Plato, Cicero, Seneca, far greater than the popular Jupiter—Allah and Jehovah far greater than the divinity of Plato's speculations—even Jehovah as conceived by the cultured and saintly christian is a far more glorious object than the average Jehovah of Christian lands. In such lands those communities which are the most eminent for intelligence and excellent living are also most noted for both the strength and quality of their faith in the supernatural. See that swearing, swindling, drinking, gambling, dissolute, and ignorant frontier settlement! Which has the strongest and highest faith in the supernatural—that, or yonder cultured and virtuous New England village! See that good man of to-day! Make sure that when, twenty years hence, he has become a still better man—more solidly principled, more strictly conscientious, more loftily just, more tenderly and actively benevolent—his faith in God will stand on a still broader base and pierce the heavens with a still loftier apex. It is simple experience. Never stood pyramid more stably and sublimely than stood the faith of Sir David Brewster at the age of fourscore and seven—a faith that had grown through the long years as fast as his ever-growing intelligence and goodness.

Look at it. A dateless and universal belief in at least one Great Intelligence of a grade indefinitely superior to the human—whence came this mighty epidemic? Did it spring naturally from a low moral and intellectual condition of the race at large—as fevers and *ignes fatui* do from marshes—or from the selfish efforts of governments and incipient priesthoods; or from both? Either origin would be inconsistent with the fact that a combined advance in knowledge and morals is found to affect the faith favorably. Did it spring from the evident profitableness of the faith in the sight of all mankind? This were strongly in its favor as being true. Did it spring from the fact that it is intrinsically and universally palatable, if not profitable? Who can say that? No-Religion makes no exactions whatever; the easiest religion known to men makes great exactions, and makes them constantly. Self-restraint and sacrifice are the common and statute law of every religious system. Not a worship but includes endless expenses, labors, cares, and fears. Codes of regulations must be carefully studied out, and watchfully conformed to. Pilgrimages, penances, works from the twelve labors of Hercules downward, must be accepted. Temples must be built, altars fed, costly rites maintained, priesthoods supported. In fine, to mere nature, a religion is a cramping formula for this world; while it offers for another world only what, according to the atheistic theory, a man is equally at liberty to expect without a God. So it would seem to be intrinsically an unpopular system. That such a system could have fought its way from nothing into virtually universal acceptance, and maintained itself there unfalteringly from immemorial antiquity to the present, without any real support from either the reason, the experience, or the interest of mankind—could even have brightened and ascended with advancing knowledge and morals, and all as the product of the hideous incubation of wickedness upon general ignorance and wickedness—is, to say the least, far from being a plain matter. It has a strong look of incredibility. It savors mightily of self-contradiction. Plainly, it would take more argument than most minds can compass to give even plausibility to such an explanation. As to demonstrating its adequacy, such a thing is out of the question. The very idea is absurd. But if we suppose a primeval revelation of God; that the doctrine was gradually lowered and corrupted to a great extent by the moral and intellectual lapses of the race; that nevertheless it commended itself so mightily to their fundamental instincts, essential reason, and great wants that even such potent sources of error could never quite overpower it among any considerable body of mankind; and that, just as soon as these incubi are lifted, the elastic and irrepressible doctrine proceeds to expand toward its normal and original grandeur—I say, if we suppose this, we have an explanation of the general faith in worshipful superhuman beings, and of its obvious partiality for intelligence and virtue, which is perfectly natural and perfectly sufficient; intuitively so. The adequacy of the explanation is perfectly axiomatic. Not a word need be said in its defense. Especially in view of the fact that all the most eminent mythologists of the present day are agreed in the opinion that Monotheism lies at the foundation of all pagan mythology.

No one who in these times and lands admits wonderfully superhuman beings, but will go further, and admit a God. As a matter of fact, those who admit them do invariably admit a true God. And it ought to be so. For this admission takes away, on the one hand, the only serious appearance of an objection to a God, and, on the other hand, vastly intensifies the difficulty of accounting for Nature without Him; indeed, makes such an account impossible, if we may trust the mathematical doctrine of chances. The only apparent objection to a God that has much weight with most persons, is His

failure to manifest Himself in overwhelming appeal to our senses and experience; and this objection is recognized as invalid just as soon as one admits any invisible intelligences above man who mingle in human affairs. And, too, just as soon as one admits such intelligences vastly above man and yet not eternal, he has introduced into the begun Nature that needs to be accounted for a new element of difficulty vastly greater than any it before contained. If it is somewhat hard to understand and show how blind causes can produce an intelligent man, it must be vastly harder to understand and show how such causes can produce an Intelligence vastly superior to man and able to make a man. In fact, the mathematics of chances forbids our attempting to account for Nature by blind causes after the admission of such a Being. LaPlace states the following law. The probability that an effect is produced by any one of given things is as the antecedent probability of that thing, multiplied by the probability that, if it existed, it would have produced the effect. Now, in the case before us, one agent is admitted as existing and able to produce the effect. To get the entire probability that it actually produced the effect, we must multiply certainty by the probability that if existent, it would actually have produced the effect. Now the latter probability is certainly greater than the probability that a competing blind cause, if existent, would have produced it. It certainly is more likely that, of two causes, the one blind and the other intelligent, the intelligent was the author of an intelligent being or even of the human body. We know multitudes of organisms produced by intelligent beings, and not one certainly produced by blind causes.

Such is the Theistic hypothesis as compared with its sole rival. While perfectly sufficient, and, to say the least, *a priori* as credible as any, it is greatly the simplest; the surest; the sublimest; the safest; the most salutary; and the most in accordance with the convictions and traditions of mankind, especially of the most enlightened and moral part of mankind. In each of these respects it has almost infinitely the advantage over the law hypothesis. And, according to the maxims and practice of philosophy in other things, such an aggregate superiority as this ought to cause the Doctrine of a God to be promptly accepted and fully rested on as the true explanation of Nature. Whatever secular hypothesis could claim as much would be accepted without hesitation by all impartial men. It would be considered triumphantly established. To oppose it would be considered altogether absurd. And no man of science, with a reputation to lose, would for one moment think of venturing on opposition. On the contrary, an hypothesis so strongly fortified with verisimilitudes and superiorities over all competitors would ascend the throne of faith, and robe itself in the purple of all her prerogatives, by unanimous acclamation of the Baconian philosophy, of scientific usage, and of the entire college of scholarly men.

After the painting has been found pervaded with Titian's characteristics, you have only to observe that, as compared with other hypotheses in regard to its origin, that which attributes it to Titian is by far the simplest, the surest, the fairest, and altogether in accord with the convictions and traditions, especially of the best judges—I say, you have only to observe this in order to receive it cordially as the work of that old master. If able, you will give your thousands for it, on the strength of your convictions.

You believe that Canova made that statue, Angelo that cathedral, Herodotus that history. A neighbor has chosen to say that each of these wonders was made by a mollusk. This is his hypothesis. Another has chosen to say that each of these wonders was made by the great artist whose name it bears. This is his hypothesis. Why do you accept this last in preference to the other? Have you made out formal proof that the oyster cannot make such wonderful things—that though inert-looking things are sometimes found possessed of prodigious power, an oyster could by no possibility ever have wrought that shapely Venus, or swelled that surprising dome, or penned that immortal volume? Nothing of the kind. You do not deem such proof necessary. It is enough for you that the hypothesis which attributes St. Peter's to Michael Angelo is on its face altogether reasonable, that it has in its favor the whole current of tradition; while, as compared with the only competing hypothesis, it is almost infinitely the simplest, and surest as to adequacy. You have no occasion to inquire any further. It does not even occur to you to do it—cautious Baconian though you are. In common with the whole art-world, you instinctively accept and rely upon the great Florentine with unlimited boldness. The mollusk explanation is paraded before you in all sorts of ingenious verbal magnificence and logical forms without making the slightest impression on you. There is not a quaver in your faith. It not only occupies you, but reigns—not only reigns, but reigns indisputably.

So reigns to-day the Newtonian hypothesis of gravity. It is everywhere supreme—in the books, in the schools, in the innermost convictions of all intelligent men. Nothing moves wing, or opens mouth, or peeps against it. And yet do we see the principle of gravity? Not at all. Have we proved by experience that each particle of matter, away to the universe's last outskirt, attracts every other particle with a force proportioned directly to its own quantity of matter and inversely to the square of the distance between the particles? Not at all. Has it ever been demonstrated that the vortices of Descartes, or even the crystal machinery of Hipparchus and Ptolemy, cannot be so amended and appendixed as to explain all the astronomical motions thus far known? Not at all. Whence, then, that triumphant acceptance of the Newtonian principle and law of gravity? Simply from its superior merits as an hypothesis. Newton started a bare supposition. It was found to explain fact after fact. It kept on explaining. It has gone on up to the present time triumphantly explaining, in fields so broad, in fields so various, in fields so numerous and high, that our confidence in its power to explain the whole round of astronomical motions is quite complete. We deem it perfectly sufficient. Besides, while, to say the least, as credible on its face as the ancient Alexandrian or the modern French hypothesis, it is vastly simpler, surer, fairer, and more in harmony with the instinctive feeling and judgment of cultured men. This is the whole of it. This is the entire ground on which stand the entire scientific world. Is it not enough? Will any one start up at this late day to reprimand the entire scientific world for accepting and relying on the great Newtonian hypothesis of gravitation with unlimited boldness? And shall any venture to blame the Theist for accepting and relying upon the Theistic hypothesis for precisely the same reasons somewhat intensified and enlarged? Confident as the astronomer may be that the clew which has not failed him yet in his wide terrene and stellar wanderings, would not fail him though his travels should go on to cover all the fields of Nature with footprints, still what he feels is not such a confidence as every sane man has that there is not a thing embraced by space whose origin the hypothesis of a God will not completely account for with infinite ease. This latter is the confidence of absolute, axiomatic, immeasurable knowledge. The other is merely the confidence of faith from a large induction of particulars. It is vastly probable—I consent to say morally certain—to at least philosophers, that this key of gravity will unlock the whole astronomical movement: it is mathematically certain to the entire sweep of humanity that this key of Theism will unlock and explain as to origin all the latitudes and longitudes of Nature. Further, in respect to simplicity, and sureness, and beauty, and accord with the convictions and traditions of mankind, especially the best part of mankind, the Theistic hypothesis has far more advantage over the law hypothesis than the Newtonian has over the Ptolemaic and Cartesian. And yet what a confidence the Newtonian displays! He threads great sciences on his doctrine like so many habitable globes. He sails away on his doctrine through the uttermost depths of heaven as on some voyaging sun. I will neither praise nor blame him. But this I say, that if he is warranted in founding himself so mightily on that doctrine of gravity, we are warranted in founding ourselves even more mightily on the doctrine of God. We have the best of countenance in making Theism the basis of reasoning and action to any extent. We have no reproaches to fear from consistent science, though we proceed to rest upon that Theism castles, palaces, cities, empires, heavens of inferences and interests, answering to, but far nobler than, those which Astronomy confidently reposes on her great hypothesis.

A word more. For *what* would a man reject this vastly superior Theism? What does he gain by putting aside this account of Nature which carries itself so regally, and before whose sheaf all other sheaves bow down—the account which, while perfectly sufficient, and, to say the least, *a priori* as credible as any, is greatly the simplest, the surest, the sublimest, the safest, the most salutary, and the most suited to the convictions and traditions of mankind? Is he afraid of a personal God—lest that sharp-sighted Omnipotence should bring him to account for his conduct? Pray, in what respect would he be better off with a Nature constructed by law! Does the law scheme, necessarily, do away with sin? Does it do away, necessarily, with responsibility for sin? Does it, as a matter of course, even lessen the avalanche of penalty which the sinner may have to encounter? Not at all. All these things are just as possible, and may be just as great, under the one system of explanation as under the other. If a mist of atoms can really make this wonderful Nature which no man could make unless his faculties of wisdom and power were infinitely

expanded—that is, if this mist seethes practically with an infinite efficiency, and its forces and laws taken together are fully equivalent, so far as the production of results is concerned, to that infinite power and wisdom which the Theistic hypothesis ascribes to God—then we have, to all intents and purposes, a material God. We have matter practically almighty and all-wise. It can do whatever an almighty and all-wise Person could do.

Now if men choose to call this wonderful thing by the name of Law, let them. If they choose to say it is unintelligent, let them.

But let them not deceive themselves with names. What they actually have is something that can do things after a manner of unlimited wisdom and power. What they actually have is something that can arrange and adapt and exquisitely fashion just as if an infinite intelligence and discrimination, as well as force, presided over the work. In short, it is practically the equivalent of a God, if not God Himself. Such a Dynamic as this, whatever name it bears, is abundantly sufficient for everything. It can govern men as well as make them—it can treat them according to character as well as give them character—it can give us a glorious Bible in words as well as a glorious Bible in worlds—in short, it can do whatever Theism commonly attributes to God. Which is the harder—to make the arithmetical machine of Babbage, or to use it as it ought to be used? No, the Something that can make a man after a manner of infinite wisdom, can go on to deal with him, when made, after a manner of infinite wisdom. The potential Fog-Bank which is able to make men who can treat other men according to character, can itself treat them after the same manner of discrimination. So what do our atheists gain? What is their compensation for espousing the hypothesis that is the most intricate and far-fetched and uncertain and hazardous and hurtful and homely and hostile to the convictions and traditions of mankind? The costly scheme—for the sake of which they are at the trouble and unreasonableness of such holocaust sacrifice of philosophy and taste and utility and venerable traditions—their costly scheme leaves men open to just as formidable possibilities as does Theism. The sinner has just as much reason to tremble before that astute Cauldron of mechanical and chemical forces that can make such a universe as this as he has to tremble before a personal God. Those are wonderful orbs yonder—this is a wonderful earth here with its packed life—even this single humanity of ours, body and soul, is an inexhaustible wonder to the most dynamical philosophy—full well do we know that the grandest man would have to develop into infinite proportions of intelligence and power before he could produce such an astounding universe as we behold—and, what I have to say is, that the primal Fire-Cloud which can organize such a universe as this which only an infinite man could organize, can, like such a man, practically discriminate between our righteousness and unrighteousness, and can, like him, pursue that unrighteousness as an unutterable Nemesis through all space and duration. Such a crafty Nebula is as fearful as God—only it can neither love nor be loved. It is as fearful as God to a sinner—though the atheist will never believe it, but will, while treating law as if almighty and all-wise for fashioning things, treat it as all-weak and all-foolish for the purpose of moral government.

CONVERSATIONS ON CREATION.

CHAPTER II.

On Tuesday evening they gathered according to arrangement round the table in Mr. Whiteley's dining-room. On the table lay a copy of Professor Huxley's American Addresses, and a Bible opened at the first chapter of Genesis; while Mr. Lowther had brought over a Hebrew Bible and concordance, for which, however, there proved to be no need on this occasion.

"How shall we begin?" said Mr. Lightfoot.

"If you please," said Jean, "I would very much like, before we come to the story of Creation itself, to mention a difficulty that has often troubled me far more than these other questions that puzzle my brother have done, though it seems seldom mentioned as they are. I hardly know how to put it in words; but there seems so much made in the Bible of such a small world! I have been reading Herschel's astronomy, and this earth seems such a mere speck in the universe, compared with what it appears to us."

"I am glad Miss Whiteley mentioned it," said Lightfoot, "for I have often felt the same thing; indeed, I think it was the original cause of what Mr. Moreton considers my heterodoxy. We have here before us a professed account of the origin of things; and whatever we conclude about it, it is plain that the conduct and fall of our human race are represented in it as involving such momentous issues, that they attract Divine interest and interposition of a very special kind. I suppose while men only knew of this world, they would feel no difficulty about it. But now I know the universe is so vast as to be literally inconceivable; now I know that even the sun is but a dwarf amongst myriads of other suns greater than he; I not only feel like David, 'Lord what is man, that thou art mindful of him?' but the feeling becomes at times a very real and distressing doubt. Is it likely, is it possible, that the Maker of such a stupendous Creation should redeem the inhabitants of just one little world at such a stupendous cost? for I quite see that, more or less, Genesis is bound up with the Gospel of John. If He has, the thought will come to me, What shall be the redemption of the thousands of worlds beside?"

"That seems to me a very short-sighted view," said Mr. Moreton. "However vast and costly a machine may be, for instance—and we may regard this universe to some extent as a vast machine—if even a very small part of it gets out of order, the attention of the maker is concentrated for the time being upon that part, small though it be, till it be righted again. Until it is put right the whole machine is out of gear."

"That seems reasonable," said Mr. Whiteley, to whose experience this argument came particularly home.

"I suppose that is the usual reply," said John. "I think I have heard it in substance from three different pulpits, and it is good enough so far as it goes; but to me it seems to go but a very little way. In fact, if I am to believe in Evolution to the full extent, as it is now taught, it really goes no way at all; for the scientific men of this school whom I have met with do not admit that the machine *is* out of order. In their opinion, man has *not* fallen; he has rather raised himself, and done as well or better than could have been expected of him. The wars, and sins, and miseries I see and feel, are to them only forms of that 'struggle for existence' which they see in all nature, and which Mr. Darwin's great book has made into a proverb."

"You are quite right," said Mr. Marsden; "but in the first place, we do feel that things are out of order, and the argument is so far valid for us. There is, however, more that may be said, and more than could have been said even a few years ago, owing to that very progress in true science—in things we *do* know—which some of you are so concerned about. We know now that many of our old notions about the universe were simply mistakes. When astronomers found that, as they turned to the heavens telescopes of greater and greater power, more and more of those nebulæ which Miss Whiteley has been reading about, were resolved into clusters of distant stars, it was natural enough they should jump to the conclusion that all nebulæ were really made up of stars, and owed their cloudy appearance simply to their vast distance. But we now know that this is not so. The wonderful powers of spectrum analysis have enabled us clearly to distinguish between light which comes to us directly from solid bodies, from solid bodies through an atmosphere, and from luminous vapor or gas. One of the chief results of this was, that nebulæ formerly thought to consist of myriads of stars at inconceivable distances, are now known to be simply vast collections of luminous gas, comparatively near, though the distances to us still remain enormous. To take one example of this, the two small cloudy patches called the Magellanic clouds are now known to be masses of such nebulous matter; and assuming them to be—as is reasonable—anything like spherical in shape, their distance from us would not very much exceed ten times their own diameter. Now this brings them within our own sidereal system, instead of far beyond it, as was formerly thought."

"But excuse me," gently interrupted Jean, with a troubled look, "it does not seem to relieve me much to know that the universe is not quite so large as I thought. To dwarf it as much as we can, still leaves it infinite—to us I mean."

"I know it, and I had no thought of dwarfing our conceptions of the extent of God's creation. That would almost be to relieve our difficulty—if it did relieve it—at the expense of depreciating the Creator. But these discoveries do prove to us that the stellar system is not, as a whole, so far advanced as men formerly supposed. Taking the accepted nebular theory of Laplace, that all the heavenly bodies have been formed out of this gaseous, luminous, nebular matter, by gradual cooling and condensation into solid masses—and you know this theory is now accepted by all scientific men—taking it as a true theory, it is plain that the process is still comparatively *young*, so far as regards the formation of abodes fit for animal life. And it is remarkable that we learn the very same thing from what we know now of the heavenly bodies nearest to us—the members of our own solar system. You see the bearing of this fact immediately."

Jean looked puzzled, while John turned to Mr. Marsden with an enquiring look. "I think I guess something of what you mean," he said, "but am not sure. I wish you would explain more definitely."

"Certainly, if you wish it. You know, then, how we used to hear about the probable inhabitants of other planets, of the giants Jupiter and Saturn, and even of the sun. Now before the sun, our earth sinks into utter insignificance. The earth, you know, is 8,000 miles in diameter, and it seems large to us. You also know well enough how the moon circles round us at the much greater distance of, say, 240,000 miles, or thirty times our whole diameter. But have you really grasped the conception that the sun, enclosing our earth at his centre, would not only give the moon ample room within himself to circle round in that vast orbit, but would extend his surface outside her a clear 150,000 miles all round?"

"It is amazing," said Mr. Lowther; "I know it must be so, from the figures; but I never tried to picture it in that way."

"Well, such is our sun. But now this is the point. Vast as he is compared with our earth, no scientific man now supposes that he is, or can possibly be at present, the abode of life. We do not yet understand much about him; but we do know enough to say positively that all the theories once put forth to show how life might exist on his surface—at least any life we can conceive of as the least like what we know of life—are idle. Whatever he may be as to the exact actual combination of matter and forces, he is known to be practically a vast furnace of such intense heat that nothing could live there. It is pretty nearly as certain that even the larger planets, so far from being cold and frozen as was once thought, owing to their distance from the sun, are on the contrary as yet nearly red hot, if not hotter still; having not yet cooled to a habitable temperature, in consequence of their vast size. So, again, what is true of our sun must be true of most other suns we see; whose spectra tell us that their dazzling light like his, is due simply and solely to intense combustion. And thus we arrive at the fact that those vast worlds of which men have thought, are not yet at the stage when they can be the abode of any animal life at all resembling our own. In our own solar system, besides our own earth, of Mars and Venus alone, with perhaps some of the moons of the great planets, can it be supposed with any probability that they may be so inhabited? Do you understand me?"

"Perfectly," said Mr. Lightfoot. He was listening with intense interest.

"Very well. All this being so, then, we look at man as he is, where we *have* got him. We contemplate the awful tragedy that may go on in one human soul; its passionate agony of feeling; its unutterable longings; its capacity for noble affection and grand self-sacrifice; even the marvellous intellectual powers which enable it, crippled though it is by a body less free than a bird's, from this little speck of ground to plumb the universe itself, and wrest from it the deepest secrets of the stars. Even so, it need not appear strange to any Christian that the Creator Himself may yearn for the whole heart's love of such as he, and stoop to wrap Himself in a shrine of humanity; though such feelings may be nothing to a philosopher. But the man of science himself teaches us, not merely that the majority of worlds around us are neither inhabited, nor as yet inhabitable; but that, even on this little world of ours, beings like ourselves are literally only of yesterday! The sun is infinitely larger than our earth; true. Yet it is not that immense sun, but the tiny earth, which is inhabited; and even on that very earth, only a few thousands of years ago, man did not exist. God—even that vague 'God of nature' in whom many non-Christians believe even yet—literally *has* chosen the 'things that were despised,' and seems that He would teach us, even from the stars, how infinitely more precious is the spirit of man, than the most splendid of merely material worlds. And since man, only yesterday, did not exist even here, it is not only possible, but far from improbable, that this globe may be the only one on which he exists even now; and that he may be the precious seed which is to people the universe in future ages. So far as these moral difficulties of the Bible are concerned, we must at least take the Bible as it represents such matters to us, and we are most distinctly told that God does regard man as the crown and glory and head of the whole universe, and does design to set him over all the works of His hands. For such a future even Christ's redemption will no longer seem disproportionate; nay, there seems to me sometimes an unutterable necessity for it, though I can hardly explain how."

"I am sorry," said Lightfoot, thoughtfully, "for I was just going to ask you what you meant. I never thought of the Atonement in that light before."

"I have just said," replied Marsden, "that I cannot explain myself fully. But sometimes it seems to me as if there were no absolute dependence to be placed on any purely individual, or what you ministers call 'creature' character or righteousness. The angelic nature has failed, if I am to believe the Bible. So has the human; and ah! the human is so weak, and has such an awful power of suffering! But look at the power of Love! even average mothers will give their lives for their babes—have done it, over and over again. Now imagine that the Divine Being could, not by any exercise of mere power, but by some deed of love of which the world had never dreamed, *overmaster* a soul—get entire and utter possession of it, so that pleasure or pain, temptation or trial, might do their worst, and yet not interfere with that whole-hearted devotion. Even here we see faint shadows of such a thing; and as to the other, it is simply—the Gospel. So it seems to me sometimes as if the whole redemptive history of our world were in order that God might possess a true family; who could and would feel that they utterly belonged to Him; would bear and do anything for Him; and could not, whatever happened, see evermore anything but Divinest glory and utter blessedness in His will. I can't explain further. If I were to put it in a few words, I should say there may perhaps be more to God—more for God—in the *heart* of a man who has sinned, and sorrowed, and suffered, and been tempted, and yet been redeemed out of it all, than in the soul of an angel; as there might be in such a salvation a power, and security, and safeguard to others beside himself, which nothing beside that we know of can give. But we can feel these things better than talk about them."

"Yes," said Lightfoot, "but I wish I had heard you talk about them before, for all that. I feel poorer in spirit to-night than ever I did in my life. But we may come to Genesis now, may we not?"

"Yes, I think so; but our discussion has not been unconnected with it, by any means. To understand the narrative rightly, it is very important to consider what may be its wider relations; and I am very glad Miss Whiteley's question led us to take that view of the matter. But now to Genesis, as you say. Here is the book before us, and it may be well, first, to ask ourselves what we should *expect* to find in it; and what we ought, as Christians, reasonably to believe of this narrative on the authority of Scripture itself."

"Of course, the old orthodox belief is, or was, that Moses wrote the whole of Genesis by directing revelation from God," said Mr. Moreton. "I do not feel so sure of that, though, as I once did."

"We may go further," said Mr. Lowther. "There is absolutely no foundation for the belief beyond the Jewish tradition. The name of Moses is not once mentioned or implied from beginning to end; and whereas Moses' own narrative in Exodus is written in clear, defined order, Genesis is evidently a combination of separate documents. The first document consists of the first chapter and three verses of the second, in which God is spoken of as Elohim; a second portion continues to the end of the third chapter; and each of the others begins most expressly with the words: 'These are the generations' of some one or other mentioned."

"Yes," said Mr. Marsden. "I want you to notice particularly, too, that it is unfriendly 'modern criticism' which has established this fact. It is *not* we who have alleged it in self-defence; the conclusion is one which the rationalists themselves have forced upon us. Do not let us forget this, because, in his first American address Professor Huxley remarks as follows:

"'In the third place, I have carefully abstained from speaking of this as the Mosaic doctrine, because we are now assured upon the authority of the highest critics, and even of dignitaries of the Church, that there is no evidence that Moses wrote the Book of Genesis, or knew anything about it.'

"The intended meaning of this is obvious. Well, now, it was *not* our side that found out Moses 'never wrote' this, though I take exception to his not knowing anything about it. It was our friend the enemy; but the grounds for the opinion were so strong that they had to be accepted, often unwillingly, by Christian scholars."

"If you are going to begin by accepting the rationalist view, that Moses just compounded a lot of stories to suit his own purpose, I do not see the use of going further," said Mr. Moreton.

"Pardon me, I am not supposing anything of the kind. It is most probable that Moses did collect these documents together: but if so, we do not suppose that he did so to suit any purpose at all, beyond that of preserving for the chosen nation the historical documents or traditions of their race. If he did this he would do it faithfully. Will you turn to Genesis xxvi. 34, and xxviii. 9."

Mr. Moreton read as follows:—

"And Esau was forty years old when he took to wife Judith, the daughter of Beeri the Hittite, and Bashemath, the daughter of Elon the Hittite. . . Then went Esau unto Ishmael, and took unto the wives which he had Mahalath, the daughter of Ishmael Abraham's son, the sister of Nebajoth."

"And now kindly read Genesis xxxvi. 2:"—

"Esau took his wives of the daughters of Canaan: Adah the daughter of Elon the Hittite: and Aholibamah the daughter of Anah the daughter of Zibeon the Hivite: and Bashemath, Ishmael's daughter, sister of Nebajoth."

"Here you see that the names of Esau's wives do not correspond, and it is remarkable that the two names occur in 'generations' of different people. We need not suppose any absolute error, for surnames were a very early custom, and there are in Genesis many cases of change in names. Or an error may have crept in, as mistakes have in some places undoubtedly. But if the record was constructed or adapted for private purposes by one writer, this seeming contradiction would not have occurred. We have here, therefore, a proof of the *fidelity* with which Moses handed down the accounts as they came into his possession."

"There is force in that," said Mr. Lowther. "I have sometimes thought that the discovery of such documents, or hearing such oral traditions, may have been the immediate cause of Moses casting in his lot with the chosen people. But a difficulty occurs to me. Though these documents may have been in writing by his time, they must, on this theory, have been handed down for a long time by tradition formerly. Now is oral tradition capable of such a task?"

"That question at least may be safely answered in the affirmative," said John. "Long histories are still handed down with most marvellous accuracy among Eastern nations. To take a case strictly in point, in a quite recent lecture Mr. Max Muller tells us, you know, how the immense mass of Hindoo Vedic documents have thus been handed down by oral tradition for centuries—from 600 B. C., to the present day. As to the accuracy of this mode of transmission, it has been such, he says, that while there are acknowledged differences or 'various readings' in them, just as in our Greek Testament, yet these various readings are recognized as such, and actually differ little more than ours do. I must admit I cannot see that the narrative is any less worthy of belief if it thus came down from still earlier days: on the contrary, it might be argued that it was more so. I will go further, and admit that a belief in the inspiration, say of this first chapter, does not bind me to believe that, supposing it were originally God's revelation to any one, it had been subsequently preserved from every minute possibility of error by miraculous interposition. Mr. Moreton might object to this, but I don't, for my part. I see that God has left it to human care and labor, to preserve the Greek text of the New Testament, and has not prevented various readings in that; and my difficulties would practically be removed if I could feel that the original Revelation, supposed to be divinely given, and however given, had been handed down with substantial accuracy by human means."

"Perhaps I am more liberal than you think me," said Mr. Moreton. "I do not know that I should object to such a statement of the case. We need not separate from such a process a very real Divine providence and guidance, either, since this is promised even now to *all* who, with sincerity, seek to serve God."

"I am glad to hear you say this," said Mr. Marsden. "Amongst you, I am saved arguing half the case. But now, supposing Genesis to be a compendium of various ancient documents—not interwoven verse by verse, as some utterly ridiculous 'higher criticism' has unsuccessfully tried to show, but frankly given as they were—what shall we say of the first, the most important *to us?* Observe, it is the only one which does not begin with the stereotyped formula; and hence, some have argued that this at least, was revealed to Moses directly."

"And why do you not think so? For I gather you do not," said Mr. Moreton.

"First of all, because there is absolutely no solid reason at all for believing it was. Secondly, because of the short, compressed, evidently traditional form of the narrative itself. But chiefly, because we find very evident traces of it long, long before Moses' time. Here is another clear case of the help our faith in the Bible has reaped from fuller discovery. We all know how Moses has been described as the 'clever inventor' of this cosmogony, not so very long ago. Now, if there is one thing proved to demonstration, it is that this cosmogony was in existence long before him. In nearly every country we find *some* traces of it. In India, Persia, Greece, and even in America, along with much variation and evident corruption, we still trace here one, there another feature of this old narrative; and I need not remind you how Mr. George Smith unearthed a very close copy of it, all things considered, in Assyria. The 'recent origin' idea, at least, is thoroughly exploded; and we may say with certainty that the stem or substance of the narrative is, beyond doubt, older than Moses.* Hence, a great many people are coming to believe that the portion we have especially to consider may probably have been revealed to Adam himself."

"That might be," said Mr. Moreton thoughtfully. "I for one, need not object to that. I do read about Divine intercourse with our progenitor—nay, now I come to think of it, it says God did bring before him at least the chief types of the animal creation, and it seems implied that Adam understood them."

"Exactly," said Mr. Marsden; "but I think there is even stronger reason for this view. The subjects of the six statements here made were precisely the subjects of adoration by most early races of men. The light, the heavens, the earth, the sea, the trees, the animals, the patriarchs of the human race itself—these were the *gods* of the heathen world. Now, on the face of the Book of Genesis—and as Christians, we have at least a right to interpret Scripture by itself, so far as doing so makes it any more consistent or probable—we have one chosen family kept free, somehow, from surrounding idolatry of this kind. How should this be, so probably as by a true, pure tradition, handed down within its line, that all these things had been ordered or made in succession by Elohim, the one true God?"

"At all events," said Mr. Moreton, "no one need object to this on the Christian side. I am quite ready to admit that."

"And we must admit," said John, "that it has no appearance of evading any difficulty, or yielding anything to unbelief on the other."

"Very well, then, if it should be so, however the revelation was originally made (I think myself it was probably in vision—we are expressly told on one occasion how the Lord 'caused a deep sleep' to fall upon Adam, and vision is the prevailing method throughout the whole Bible, as you know), we know exactly what to expect. It would necessarily be *crystallized*, as it were, for the purpose of transmission; with very simple outlines, arranged not necessarily in poetry, but yet probably, with some formality or repetition in words—in such a 'sing-song' shape, to put it plainly, as would dwell in the memory."

"I do not like the word 'sing-song,'" said Jean.

"You need not object in the sense Mr. Marsden means it," said Mr. Lightfoot. "I quite understand. You simply mean a marked, characteristic, formal, lesson-like mode of expression, such as would 'stick,' as it were."

"Precisely so. I need not say this is exactly what we do find. Again, while any such relation must be accurate, the accuracy must be one of *popular* meaning: *i. e.*, using words in common senses. You will see what I mean by this as we go on. Meantime, I only remark that this again is precisely what we do find. What I hope we shall see before we have done, is that the account before us, construed fairly, and as it ought to be, in popular language; read as describing the *main points* of what Adam would have seen if a true vision of the past had been put before him; is in harmony with the latest scientific knowledge. Surely it is fair to say that more than this could never have served its purposes, and would never, without an absolute miracle, have been remembered and handed down at all. We ought to expect simply the main features of the genesis of things, as they would appear to, and be described by a plain man; and no more."

"That is reasonable," said John, and all assented.

"We shall see before we have done that this is the very method geologists themselves have been forced to adopt: but I think it is time to leave off for to-night, is it not?"

"I am afraid it is," said Mr. Whiteley, and they rose from the table, all being surprised to find how late it was. The visitors hurried off, and their host was amused to see how particularly cordial Mr. Moreton was in shaking hands with one whom he had so lately dreaded as a "dangerous man."

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* Canon Tristram well remarks upon this part of the subject as follows:—"We have been told that the Pentateuch, in its present shape, was compiled by Samuel, by the later Seers, or by Ezra. But now it is no longer possible to suggest any origin later than the date of the Exodus for the history of Genesis; for to the Jews of the later period of Samuel the records of Assyria were inaccessible, and the structure of the language of Genesis is too archaic to be postponed to the period of the captivity. . . . The Assyrian records prove to us that the pre-Abrahamic history was not a vision revealing to Moses facts of which he was heretofore ignorant, but a simple monotheistic relation of a continuous story of the earth and of man's origin, which, in a corrupted form, had actually at that time long existed in writing. . . . What, then, was the common origin of the Hamite or Akkadian cylinders, and of the Mosaic history? There surely can be none later than the accounts imparted by the common father of Shem, Ham, and Japheth, before the dispersion of mankind."—*Genesis and the Brick Kiln.*

CHAPTER III.

"How shall we begin to-night?" asked Mr. Lowther, when the party had assembled.

"Turn to the text itself," said Mr. Marsden. "And, first of all, let us look at it as a whole, to see what general aspect it wears. The very first remark I have to make about it is this, that it is upon its own face a narrative of Evolution."

Mr. Moreton rather started. "I do not like the word," he said, "and it seems as if you were just going over altogether to the enemy's camp." John and Mr. Lightfoot looked interested, as, in fact, did all the others.

"Words stand for things," calmly replied Marsden, "and we are not met to dispute about mere names, which we can do little towards shaping, but to discuss the truth of things themselves. When some scientific men find even in nature an Absolute Being, or Force, or Mystery, which they call the Unknowable, you justly complain of them that they are so manifestly unwilling to admit either the name or idea of God. You are just as bad—just as unfair—if you are frightened beforehand at a name, or idea either. Let us first see, without prejudice, what it means. I say this is *not* an account of things being framed as they are by one single and simple act of will; but even after the first and preliminary statement recorded in the first verse, it puts before us a gradual process, divided into six grand stages or degrees. Is not this the simple fact?"

"Well, yes."

"Very well. Then this meets on the very threshold a statement of Professor Huxley's, in his first lecture, which must be put aside as inaccurate. Read from that lecture, John, the passages I have marked."

John commenced reading as follows:

"So far as I know there are only three hypotheses which ever have been entertained, or which well can be entertained, respecting the past history of nature. . . . Upon the first hypothesis the assumption is that phenomena of Nature similar to those exhibited by the present world, have always existed; in other words, that the universe has existed from all eternity in what may be broadly termed its present condition."

"As both Professor Huxley and ourselves reject that hypothesis, we need not discuss it, I think," said Mr. Lightfoot.

"No; but please go on, John."

"The second hypothesis is that the present state of things has had only a limited duration; and that at some period in the past a condition of the world, essentially similar to that which we now know, came into existence without any precedent condition from which it could have naturally proceeded. The assumption that successive states of Nature have arisen, each without any relation of natural causation to an antecedent state, is a mere modification of this second hypothesis."

"Now we need not object to this definition so very much, if it stood alone, though I do not think the last sentence is quite candid. That last sentence, by the way, appears an after thought, for it does not appear in the verbatim report I have here by the reporters of the *New York Tribune*. But Mr. Huxley, a little further on, again describes this hypothesis in the terms John will next read to us from the sentences I have marked."

"The second hypothesis supposes that the present order of things, at some no very remote time, had a sudden origin; and that the world, such as it now is, *had chaos for its phenomenal antecedent*. . . . If you turn to the seventh book of *Paradise Lost* you will find there the hypothesis to which I refer, which is briefly this: that this visible universe of ours came into existence at no great distance of time from the present, and that the parts of which it is composed made their appearance in a certain definite order, in the space of six natural days."

"Now it is true Professor Huxley ostentatiously terms this the Miltonic hypothesis, and professes to keep it distinct from the Biblical account. But not only is it perfectly clear that all along he is attacking the Biblical account under cover of Milton—what has he really to do with what Milton thought?—but further, this definition is *not* one of three 'only possible' hypotheses. Apart from Evolution, the theory of Creation is not shut up to six natural days, or to a recent period, or to a sudden origin with chaos for its antecedent, as you all know, and as Mr. Huxley very well knew also—hence probably the addition I just alluded to. We shall come to this particular matter further on; but just now we are more concerned with another still more serious misrepresentation regarding that doctrine of Evolution which is before us, and which is put before us by him as the third and *only other possible* hypothesis. Please read what he says about that, John. And here I must ask you to read from the American report, which gives the actual words used, because this passage has been seriously altered in the English edition. We must grant a speaker's right to revise, of course; and in case of any actual error such as a reporter might make, we must abandon a mere reporter's version. But Mr. Huxley spoke without notes; there is no error here; and these are not only beyond doubt the words spoken, but they convey far more truly the *spirit* of the argument."

John read:—

"And then comes the third hypothesis, which is the hypothesis of Evolution; and that supposes at any given period in the past we should meet with a state of things more or less similar to the present, but less similar in proportion as we go back in time; that the physical form of the earth could be traced back in this way to a condition in which its parts were separated, as little more than a nebulous cloud making part of a whole in [to] which we find the sun and the other planetary bodies also resolved; and that if we traced back the animal world and the vegetable world, we should find preceding what now exist animals and plants not identical with them, but like them, only increasing their differences as we go back in time, and at the same time becoming simpler and simpler, until, finally, we should arrive at that *gelatinous mass* which, so far as our present knowledge goes, is the common foundation of all *life*. *The tendency of science is to justify the speculation that that also could be traced further back, perhaps to the general nebulous origin of matter.*

"The hypothesis of Evolution supposes that in all this vast progression there would be no breach of continuity, no point at which we could say, 'This is a natural process,' and 'this is not a natural process;' but that the whole might be strictly compared to that wonderful series of changes which may be seen going on every day under our eyes, in virtue of which there arises out of that semi-fluid [comparatively] homogeneous substance which we call an egg, the complicated organization of one of the higher animals. That, in a few words, is what is meant by the hypothesis of Evolution."

"That is the full, extreme view of Evolution," said Mr. Lightfoot. "Haeckel would agree to every word of it."

"I confess I am astonished at the alterations," said John. "I see the whole sentence you have underlined is omitted in my English edition, and for the expression, 'that gelatinous mass which . . . is the common foundation of all life,' is substituted, 'that undifferentiated protoplasmic matter which . . . . is the common foundation of all vital activity.' In fact, the whole first paragraph is practically re-written."

"I should have made both those remarks if you had not," said Marsden. "You can all see how the original has been toned down, and how an expression obviously referring to the exploded Bathybius, is modified for the reading of a more cultivated audience. Professor Huxley had considered certain matter dredged up by the *Porcupine* in 1857, to be the simplest form of living matter, and to be a life-forming sheet, enveloping, at least, large portions of the globe. To this, in honor of the great arch-Evolutionist, who insists on banishing even the idea of Final Cause, from the universe, he gave the name of *Bathybius Haeckellii*. Further investigation has shown that there are no grounds at present for such an opinion: and though a writer in the *Popular Science Monthly*, of New York, in reply to a lecture (certainly in very bad taste) by the Rev. Joseph Cook, has vehemently denied that Mr. Huxley ever 'recanted.' Professor Huxley since that article has alluded to Bathybius in terms which leave no doubt on that point. At present the lowest known form of life is a regularly organized cell; no mere 'gelatinous mass' of living matter is known to exist, and it is a question whether, under the circumstances, such terms ought to have been used even before American hearers. It is shown above that they have been altered for English readers. However, all that I want you to see now is that here is an Evolution entirely self-contained, which neither needs nor includes any agency but itself. But you see at once that it is a grossly inaccurate, and, therefore, unscientific statement of the case; it is as bad an example of begging a whole question, as you could match from the narrowest old theologian. We must deal fairly with such a hypothesis; we are bound in argument to regard it as conceivably true, and one which Mr. Huxley or any one else has a right to maintain. But when it is put before us as the *sole* alternative to the other two views, defined as he has defined the second, it is a total, however unconscious, misrepresentation. Not only, as I just now remarked, *may* a real Creation have taken place long ago instead of recently, and occupied very different periods from 'six natural days;' but this very hypothesis of Evolution may be conceived of in senses widely different from the view here given us."

"I see what you mean," said John. "I never thought of it before, but it certainly is neither fair or scientific. Please go on, however."

"Evolution, then, not only *may* be conceived of in very different forms from this, but it actually *is* so held by men of the highest scientific attainments. The various modifications possible are almost infinite; but I think we may fairly say that there are, at least, four tolerably well marked forms of the theory. Two, however, are enough for us, the lowest and the highest. The lowest of all recognizes nothing but matter and its properties—properties which belong to it no

one can tell how; this view is expressly avowed by Haeckel, in Germany, and seems to be adopted by Mr. Huxley in this passage. Then we get through various degrees up to the highest view, which regards Evolution merely as a statement of the fact that God has not only ever worked in order and according to plan, but chiefly, if not altogether, by *law;* which sees Him consciously working in all the laws of nature—working this very day. Such a view by no means excludes an actual directive power, or even occasional special interventions. Now it cannot be denied that such direction and power as this view supposes is the only *known* method as yet of getting over some stupendous difficulties that embarrass the theory of Evolution itself. But without pushing that argument, when I say that this is the view held in England by Mr. Wallace, who shares with Mr. Darwin the great discovery of Evolution as seen in living beings; that in America this is the view held by Dana, who, since Lyell's death, stands in the very front rank of living geologists; and especially that in his last published works there are very evident signs of Mr. Darwin himself now thinking very much more in this way than he did when his great book on the Origin of Species was written, I have surely a right to say that such is a real, possible, intelligible, and scientific theory of Evolution."

"Yes," said Mr. Lowther, "and I suppose most of us who accept the theory would believe in it more or less in this way."

"Very well, then. If that be so, in the first place, Mr. Huxley was not right in defining the three alternatives as he has done. And in the next place, the very first thing we learn about our text is, that so far it agrees with us. In such a sense of the word—as a statement of the orderly sequence, plan, and method of God's work—not only need neither you nor I object to the term, but the narrative before us is strictly a narrative of Evolution."

"It is a narrative of successive stages, of course," said John.

"It is more than that. So much would not necessarily imply evolution, which includes the idea of gradual development as well as succession. But we not only have here, on the face of it, certain successive stages, but they are orderly and *progressive* stages. They pass in succession from the simpler to the more complex. The order may or may not be the same science tells us of—that is a point we have to look into—but it *is* an order of a distinctly progressive character; and so far, at least, our narrative, written thousands of years before the scientific system of evolution was elaborated, exhibits, not discordance, but a remarkable agreement with the greatest scientific discovery of the present age."

"I see what you mean," said John. "Yes, I feel that the agreement so far *is* remarkable. I am not sure," added he thoughtfully, "that even so much as this would not weigh heavily with me, in spite of many discrepancies in detail. But you said just now, that the recognition of a creative power—or, at least, of an intelligent directive power—working through all these processes, was the only known method of meeting difficulties about the theory of evolution itself. I should like to know more of what you mean by this."

"Well, in the first place, many difficulties in regard to the evolution of even species of animals, by what Mr. Darwin calls 'natural selection,' still remain entirely unsolved. By his own express admission, the process must have taken more millions of years than profound mathematicians like Sir William Thomson, say is possible upon physical grounds. How sufficient variation for selection to work upon happens to occur at all, is not accounted for; much less how the early degrees can be at all beneficial, and thus get developed. For instance, the long neck and fore legs of the giraffe enable the animal *now* to browse on the upper shoots of young trees; but the slight early lengthening can have been of no possible advantage in this way. I am not, as you know, myself a biologist, and have little but a reading acquaintance with this branch of science; but, in the same way, when it is said quadrupeds sprung from more primitive vertebrates without limbs it is impossible to see what benefit the *first* rudiment could have been. Or take the suckling-organs of mammalia; what use could they be at all, until *enough* developed to give milk? There are countless questions of this kind. Mr. Darwin entitled his great work 'The Origin of Species *by means of natural selection*,' and not only rested his theory then mainly on this cause of modification, but intimated that if it were shown to be insufficient, the theory would break down. In his later works he admits natural selection to be incapable of accounting for many phenomena, and lays very much stress upon sexual selection, or choice of mates by the two sexes. It is also noteworthy that in his address 'On the coming of age of the origin of species,' delivered at the Royal Institution on April 9th, 1880, (the book was published in 1859), Professor Huxley *does not so much as mention natural selection.* On the other hand Mr. Wallace, a naturalist of almost equal eminence to Mr. Darwin, and who shared with him the parentage of the doctrine of evolution, entirely disputes the power of sexual selection to effect what is demanded of it, and himself believes Evolution in the Theistic sense, to which sense it can easily be shown Mr. Darwin's later writings more and more approximate. Then, again, there is the grand difficulty of the absence of transitional forms, which *ought* to be found of every degree, but are not, as you know."

"But you know how Professor Huxley replies to this difficulty," said John. "He refers to the imperfection of the geological record, and to the fact that many successive discoveries have supplied missing links."

"I know it; but such a reply does not in the least meet the real difficulty of the matter, when the facts are fairly considered. It is, in the first place, a gigantic assumption that the record is so imperfect as must be taken for granted, especially if the older geologic convulsionist theory is to be given up, and that of slow and gradual changes like those now in process substituted for it. Such a view rests the whole hypothesis upon a vast assumption absolutely without proof, for there is absolutely no trace whatever of such *wholesale* omissions as must be supposed if this reply to the standing difficulty be admitted. In 1859, Mr. Darwin wrote, 'I can answer these questions and grave objections only on the supposition that the geological record is *far more imperfect than most geologists believe.* Since that, the sheet-anchor of those who took refuge in this argument has been the supposition that the beds of the great oceans were formerly continents, and that they probably buried many missing forms. But the voyage of the *Challenger*, as Dr. Carpenter has recently shown, has entirely negatived that supposition, and proved almost to demonstration that the great outlines of sea and land have probably remained the same from the first, with merely some changes in detail on the boundaries between them. It is remarkable that the same opinion was previously reached by Dana on entirely different but very strong grounds. But especially, the discovered missing links do not all occur *in the right places.* Species extinct for long ages fill up gaps in species of to-day, with which they could have no concern in hereditary descent. If I may so express it, many of them do fill up gaps in a *plan*, but not in a *process.* Do you understand my meaning?"

"Perfectly."

"We cannot go into this matter at length. Some other time we may perhaps discuss the difficulties of natural selection. But, very briefly, the links discovered all leave the history of animals like a flight of steps, where it ought to be an inclined plane. The geologic record is not so imperfect but that it shows us, in every age, a *complete* fauna just as now, and with quite as marked divisions. In different parts of the world the same strata reveal the same living beings, and it is not till thousands of years after that the transitional forms are found which partially fill up the gaps. Then, again, everywhere forms appear with remarkable suddenness; and, to take one striking example, such an organ as the eye bursts upon us in perfection in the trilobites of the very lowest Silurian strata. At one time it was thought they offered evidence of gradual development in these organs; but it is admitted now that some of the most perfect eyes are found amongst the earliest forms. These very trilobites, by the way, disappeared as suddenly as they appeared. To sum up, every particle of *evidence* goes to prove that while the orderly and progressive development of species is a reality, that progress was througout by sharp, decided steps, and *not* by insensible degrees; and to this statement there is absolutely not one solitary exception."

"Surely you would admit the wonderful pedigree of the horse as given by Professor Huxley in his third lecture."

"Of course I admit it; but you could not have cited a better example of what I mean. First of all, in this wonderful series you still have steps, and not an inclined plane. The very first animal he mentions, the *Orohippus* of the Eocene, or early portion of the Tertiary formation, is still a *Hippus* in many of its characters, but it is separated by a wide gap in size from its successors. It has been described as 'a little animal no bigger than a fox, but of the horse species.'"

"I do not see that Mr. Huxley refers to that," said Jean.

"No; and I think it would have been more candid if he had, though the omission was no doubt unintentional. But you see he still leaves unaccounted for this *progenitor of the type*; and here I must ask you to read again, John, a rather important passage."

John read as follows:—

"So far as our present knowledge extends, the history of the horse

type is exactly and precisely that which could have been predicted from a knowledge of the principles of Evolution. And the knowledge we now possess justifies us completely in the anticipation, that when the still lower Eocene deposits, and those which belong to the Cretaceous epoch, have yielded up their remains of ancestral equine animals, we shall find, first, a form with four complete toes and a rudiment of the innermost, or first digit in front, with probably a rudiment of the fifth digit in the hind foot; while in still older forms, the series of the digits will be more and more complete, until we come to the five toed animals, in which, if the doctrine of Evolution is well founded, the whole series must have taken its origin."

"This argument not only may be granted so far as it extends to the Eocene, but since the words were spoken Professor Marsh, as you see in Mr. Huxley's note, has unearthed an *Eohippus* from the earliest Eocene deposits, which pretty fairly answers to this description. I wish to blink nothing of all this, or to dispute that the history may be carried further yet. But the animal is still a *Hippus*, and the great fact we have to account for is the appearance of the *type itself* on the face of our earth in the Tertiary period, or in fact of the whole family of Mammalia. Professor Huxley challenges the Cretaceous period, you observe. You said you learnt geology at school, and have studied it since, and you know well enough that there is no trace known as yet in the Secondary period of any mammals, except a few marsupials. The exact nature of the Cretaceous series may be yet a little doubtful, perhaps; it comes in order between the Secondary and Tertiary, and has been classed with each [by good authority]; but any way, go only a little back, fairly into the secondary series. Professor Huxley rightly implies that we *ought* to find there the equine ancestors; but when he assumes they *are* there, I may safely ask you whether such an assumption is—geology. Is it science at all, so far as science is based on observation of the facts of nature? Is it simply *true* for him to say, as he does just after,

'This is what I mean by demonstrative evidence of Evolution. An inductive hypothesis is said to be demonstrated when the facts are shown to be in entire accordance with it. If this is not scientific proof, there are no merely inductive conclusions which can be said to be proved. And the doctrine of Evolution at the present time rests upon exactly as secure a foundation as the Copernican theory of the motions of the heavenly bodies *did at the time of its promulgation*.'

"The qualifying sentence at the end is not in the *verbatim* report, by the way. But, any way, is it a fair statement of the case to add, that 'in fact, the whole evidence is in favor of Evolution, and there is none against it'?"

"No, it is not," said John. "I see what you mean; he has to start with a *Hippus*, and as for the ancestors of the *Hippus*, he cannot cite at present even any mammalian animal. But then, if I understand you, you seem now not to admit that there is any truth in Evolution and yet just now I understood you did admit it."

"I do believe in it. I think Mr. Darwin and Mr. Wallace have given shape to the greatest discovery of our age, in showing that the whole universe is a consistent whole. I believe in Evolution as a statement that there has been and is method, order, plan—even progressive development according to plan. But it seems to me we are bound to include the plan, and an active will that can form it; and you know what that implies. Mr. Darwin says much about domestic variations and their magnitude. I cannot forget that the motive power in these changes is precisely that active, intelligent *will* of which I find the absolute need in interpreting nature's larger phenomena; and as I have before observed, Darwin himself evidently feels this of late more and more, and his late utterances are by no means like his earlier ones. To take this very case of the horse. There is no atom of reason why the gradual growth of the middle digit, and the development of the nail upon it into a hoof, or the early dwarfing and then disappearance of the others, should favor the animal's own existence in the slightest. If they did, why were not all other animals, or at least, the majority, modified in the same way? But once imagine the intelligent Being from whose energy all proceeds, foreseeing that an animal which could withstand much work on hard roads would be required by man, and we can understand why the operation of what we call the laws of nature should be directed into the required channel. Look at the matter in that way, and the orderly and yet marked series of animals comes at once into harmony with both science and a belief in God. The difference is just that God would in this case have been *preparing* for man—leading up to him—through thousands of years, as surely, and as gradually, and as steadily as the seed-corn grows into the plant; and as 'naturally' too."

"You make me an evolutionist against my will," said Mr. Moreton. "I can't say how much I like that idea; it is so like the long preparation for the Advent of the Son of Man."

"I am glad to hear you say that. But I have only touched on this part of the subject. I naturally, as you would suppose, look at the matter myself more from the purely physical point of view. I can only sketch the case very briefly even here. You know what is commonly called the nebular hypothesis, of course."

"Yes."

"I am not sure that I do," said Jean.

"It supposes that the Universe was originally a vast expanse of hot rarefied gas, or rather probably matter much more rare than any gas we now have experience of. This is supposed to have had or acquired a rotary motion in one direction, thus acquiring a general shape like that of a watch, and to have gradually cooled, being at the same time attracted to its centre by the force of gravity. Such a process would result, first, in rings of this matter being separated in succession; and these rings would gradually break up and consolidate into separate masses; at first still gaseous, but as they cooled becoming first fluid, and at last condensing at the surface into a solid crust, so forming suns and planets. There would also be many local eddies, or centres of rotation, which would behave in the same way, so forming moons; and in this manner the whole stellar and solar system is accounted for."

"Is this any more than a theory?" asked Jean.

"I think it is. It is, at all events, remarkable that since it was first enunciated nearly all the then missing links seem to be filled up and we see in the heavens phenomena representing every stage of the supposed process. The spectroscope has very lately revealed to us vast masses of luminous gas, and also what appear to be star centres still surrounded by such gaseous matter. We have planets, and moons, some of them exceedingly small. We have, in one case, the remarkable phenomenon of a perfect ring round Saturn of myriads of small bodies, besides his larger moons. Finally, we have, instead of one large planet, the remarkable stream of hundreds of small asteroids; and other streams containing millions of still smaller solid bodies which circle round the sun as meteorites, and which in some mysterious way are connected with comets, one of which has been seen to break up before our very eyes. Even though we may not yet be able to trace the exact relations of all these things, the existence of all of them in actual fact is very weighty evidence, as you must see; very far more weighty than what was thought sufficient when the theory was conceived by Kant, and shaped more definitely by the great French astronomer."

"Then if everything so well agrees with the theory, where is the difficulty?" asked Jean.

"Well, there are some difficulties even of detail. For instance, all the moons ought to revolve in the same direction, whereas in the case of two planets—Neptune and Uranus—they revolve in a retrograde direction to the rest of the system. We may, perhaps, conceive of some mass foreign to our solar system sweeping through it, and so causing these two local eddies of contrary motion; but such a cause must have acted with such enormous force, that it is very difficult to reconcile anything of the sort with the preservation of the entire system at all—it still remains a great difficulty. Then again, the figures and densities of the earth and other planets have been found as yet impossible to reconcile with the mathematical conditions of the process."

"How so?" asked Mr. Lightfoot. "I thought the earth was precisely such an oblate spheroid, or orange-shaped body, as might have been expected."

"It is so, speaking generally; but the figure is not what might be expected. It is not flattened *enough* at the poles for a body supposed to have gradually cooled from a highly fluid condition, and to have assumed its present state solely by what we know as natural laws. Some other unknown, extra force has to be conceived of or made room for, and the same necessity arises from the density of these great masses. At a depth of 400 miles water would be compressed to the density or weight of quicksilver; yet the density of the whole globe is only about five-and-a-half times that of water, and double that of the average surface crust. The intense internal heat, and other reasons, have been alleged for this, but none of these theories are as yet sufficient. Jupiter's density is a still more difficult problem, since, vast as he is, and although by the hypothesis he must have had longer to cool, his density is only about that of water. If, in his case, we assume that this is due to his greater size retaining greater heat, and so causing greater internal repulsion, then we are met by the fact that the still more enormous and infinitely hotter sun, though he, too, is four times lighter than the earth, and would be formed at a later period, is heavier than Jupiter. In fact, our earth is heavier than any other of the planets, except Mercury, the smallest and last formed of them all, so far as yet known;* and much

* Another small planet is suspected between Mercury and the Sun, but the fact has not been verified.

heavier than the large planets and the sun; and we are utterly unable to explain *why*. It does, however, appear that in many respects the earth is an *exception* to the general constitution of the planetary system; and this fact so far corroborates the suggestion I made the other day, that its inhabitants may really occupy a very special place in the great Universal Scheme. Still further, it appears from the shape and behavior of Jupiter, and Saturn, and Mars, and that there are very wide differences in the internal constitution, or the changes in density as we approach the centres, of these orbs."

"This is very interesting," said Jean; "but if I recollect right, you spoke of all these as only details."

"Yes: any of these problems might be solved to-morrow; but there is a far more fundamental difficulty, or rather two. The philosophers who would solely account for the system by natural laws, had to suppose that the original nebulous matter, or vast mass of luminous gas, owed that condition solely to intense heat, and formed the system—mark, the sidereal or star system as well as the solar system—by cooling down, whilst in rotation. We will come to the rotation in a minute; but first, as a physicist, I am bound to ask how this mass *was to cool*—how cooling was possible. If, as some said, it filled all space, then all was equally hot; and for a hot mass of anything to cool, it must radiate heat to a cooler mass. *Our* experimental masses of heated gas can cool, because we can surround them by a cooler region; but this is impossible here. If, on the other hand, it is said that the matter did *not* fill all space, we are no better off, though it has indeed been foolishly said that heat *was* thrown off 'into the intense cold of space.' But if this outer space be considered as an absolute vacuum—and we must consider it so outside wherever the supposed boundary lies—radiation of heat is still inconceivable. As far as known natural laws carry us, heat can only be transferred from matter to matter; and when all is equally hot to the very outside limits, as supposed, any such process must be impossible."

"I see," said Mr. Lightfoot. "Yes, I learnt enough physics at Cambridge to understand that."

"Even that is not all. Upon this hypothesis the gaseous matter must be infinitely hotter than the solid, the nebulous condition being simply the result of heat, and the solid of cold. If, therefore, the comets be nebulous matter, as the spectroscope shows, they should be much hotter even than the sun; but we know this is not so, since immense comets have passed comparatively near the earth without producing any perceptible effect. Nay, Mr. Lockyer's later spectroscopic researches seem to show that the nuclei of comets are comparatively cool.* It is as certain as anything can be that the sun is infinitely hotter than any of the gaseous matter in the system which belongs to him."

"But you have something else yet, have you not?" said Jean.

"Yes; we still have to account for the vast amount of mechanical force our solar system exhibits. It is something *awful* in its amount, and the point is particularly interesting on account of the great modern discovery of the conservation and convertibility of force."

"What is that?"

"It is known now that heat and motion can be converted into one another; and so also of electricity, light, and the other forces of nature, as they are sometimes called. All are forms of some one mysterious ENERGY, whose amount we can neither increase nor diminish, though we can change its forms. But now to this mechanical energy. The highest speed of an express train gives us an impressive idea of energy—call it sixty miles an hour, a mile a minute—and very few trains ever reach that. Now to try to imagine sixty times as fast, or sixty miles a minute—a mile every second. Yet even our earth rushes through space *twenty times as fast as that*, or nearly twenty miles every second of time! The vast star Sirius, which is many times larger than our enormous sun, rushes through space at least as fast, and so does probably our own sun, though his speed has lately been questioned. But there are meteors which enter our atmosphere at the rate of even sixty or eighty miles per second. Now, the point of it is, that this speed is so vast, it is found the solar force of gravity cannot account for it. The question never has been answered yet, of where this inconceivable, awful amount of force comes from;* and it is admitted generally, I believe, that the nebular or cosmical theory has yet to be reconciled with the simple, naked theory of Evolution as taught by modern philosophers. It will not account for many phenomena, to say nothing of the fact that, as you can easily see, if these forces, and this matter, *and nothing else*, had existed from eternity, the whole must have 'run down,' or reached a uniform dead state, an eternity ago."

"But I understood you to say you believed both in Evolution and this nebular theory?"

"So I do; but I believe in it as the *method* of a Something above it all. I add to it, as even Mr. Spencer is forced to do, a mysterious, inconceivable *extra*, itself the Source of all Energy. Then the theory presents no difficulty. I see that one species of animals never—absolutely never—*slides* into another, as Mr. Huxley implies; yet I see, or think I see, that it is on an evident plan made at a certain time, the *stepping-stone* to another. I acknowledge, therefore, that it is a stepping-stone, but I also acknowledge an intelligent Power that can thus *make* out of what is such a stepping-stone to something that is not, but is to be; I can then understand that the leap may sometimes be a small, and sometimes a startling, one, precisely as we find it in Nature. Again, such a Source of Energy may in some way to us unknown, have *compressed* the masses of gaseous matter, and thus produced heat, precisely as we can compress air in a tube by a piston, until it is hot enough to ignite tinder, as you have seen me do. We *must* have some external force, if I may call it so, to account for those vast motions. We may just as well suppose it here also; and such external compression will account for the figure of the earth, and the other apparently irreconcilable facts of the case."

"Now I think of it," said Mr. Moreton, "it really is a curious coincidence that in Proverbs the Wisdom of God—Christ as I should say—is actually spoken of as '*describing a circle* upon the face of the deep, or abyss—in other words, shaping something into a globular mass."

Mr. Marsden's eyes lighted with pleasure. "I never thought of that," he said. "Such an argument is more in your way than mine, and you must not push such apparent verbal coincidences too far; but I am thankful for anything in the Bible that disposes you to look more favorably upon the science you are so afraid of. Our time is up, however. On the next occasion I hope we shall come to the days of creation."

TO BE CONTINUED.

(End of Required Reading for February.)

* The spectrum of the nucleus of several comets has been found to coincide exactly with that of heavy carburetted hydrogen. Now blue rays are the last to appear as any substance is gradually heated. Thus, iron first gives out a dull red light, which, as the heat is raised, becomes orange, and finally white when the proper proportion of blue is added. So, also, carbon itself gives, as is well known, a light greatly deficient in blue when burnt in a candle or lamp, but rich in blue when subjected to the more intense heat of the electric arc. Mr. Lockyer found that the light from these nuclei was greatly deficient in blue rays; and hence he inferred that the temperature was by no means extreme.

*Some of these aerolites are highly charged with hydrogen gas, so highly that they must once have been in a very highly condensed hydrogen atmosphere; and the only theory yet proposed, which has about it any germ of probability, is, as stated by Professor Graham, that they have been formed in and expelled from distant orbs, and have actually brought to us "*hydrogen from the stars!*" The sun's attraction could not possibly produce, at the distance of the earth from him, a velocity of more than about 45 miles per hour.

VOILÀ TOUT.

A young mother by a window low,
Crooned a love-song tender and sweet,
Swaying a cradle to and fro,
To and fro with her dainty feet.
Ah! Love-light shone in the blue eyes rare,
And sunlight fell on the gold-brown hair,
A benison on the lady fair.

A bird sang long in the nest above,
Chirped and twittered the livelong day,
Burdening her song with love, I love,
And who is there that shall say me nay,
Cuddling her downy things under her breast,
Swayed by the breeze she sank to her rest,
Softly singing, I am blest, I am blest.

But night came on, the storms were chill,
Fast and heavy the rain drops fell,
The north winds blew from over the hill
Past cot and tree. Ah well, ah well,
The morning came, the song had fled,
A low sad moan near the cradle bed,
Baby and birdlings—both lay dead.

FIFTY QUESTIONS AND ANSWERS ON HYPATIA.

[NOTE.—An historical novel is a story weaving together historical facts with a thread of romance. In the line of historical novels "Hypatia" probably stands at the head. It is exact and correct in its delineation of scenery, history of events, and state of society, and its portraiture of men and women of the fifth century. Nearly all of the so called historical novels take great liberties with their characters, representing their virtues or vices to meet the demands of their story, and mixing facts and fiction in inextricable confusion. "Hypatia" is not open to this objection. The author has conscientiously adhered to historical truths, and the judgment he passes upon the men and women who figure in his story is that of a careful and unbiased historian. "Hypatia" may be read with profit and pleasure at least three times: First, for the interest of its romance; second, for its great amount of historical and other information; third, for the enjoyment of its style.

The following catechism is not intended either as a critical review of "Hypatia" or as a complete synopsis of the story. The object is rather to throw light upon some of the surroundings, and thus serve as an aid to a better understanding of the work. A. M. M.]

1. Q. Name ten of the leading characters in Hypatia. A. Hypatia, Cyril, Orestes, Synesius, Heraclian, Amalric the Amal, Philammon, Pelagia, Miriam, Raphael Aben-Ezra.

2. Q. Where are the principal scenes laid? A. In the Laura, a monastic retreat up the Nile, Alexandria, and near Rome.

3. Q. Who was Hypatia? A. She was the daughter of Theon, and presided over the Neo-Platonic school of Philosophy at Alexandria, where she expounded the principles of the system to a numerous auditory.

4. Q. What character is given to her by the author of Hypatia? A. That of a pure and moral life; and a most graceful, modest and beautiful person.

5. Q. What is the Neo-Platonic Philosophy expounded by Hypatia? A. It is a school which sought to reconcile the Platonic and Aristotelian systems with oriental Theosophy.

6. Q. What is the Platonic system of Philosophy? A. The system taught by Plato, a disciple of Socrates.

7. Q. What are some of its leading principles? A. Its two leading principles are, first, that no one is willingly evil, and, second, that everyone possesses power to make changes in his own moral character.

8. Q. What does he consider the two great causes of human corruption? A. First, wrong education; second, the evil influence of the body on the soul.

9. Q. What were his doctrines as to God and the soul? A. That God is an infinitely wise, just and powerful spirit. The soul existed before entering the body, and is immortal, and the impulse to be like God is in the soul of the true man. All knowledge possessed by the soul was acquired in the state before being enshrined in the body, and all learning is the calling up of that knowledge by the senses.

10. Q. How does his philosophy seek the reformation of man? A. By limiting the passions and desires of the body, and the enforcement by the state of right principles of education.

11. Q. What is the Aristotelian system of Philosophy? A. That taught by Aristotle, a pupil of Plato.

12. Q. What was his teaching as to God? A. God exists as an infinite, immaterial being, a first something.

13. Q. What did he teach as to virtue? A. That it is a state of the will, and not of the reason or taste.

14. Q What did he hold as to happiness? A. That it is the end of action, and that true happiness is derived from the perfect action of those faculties which separate us from the beasts.

15. Q. What can you say as to the extent of his writings? A. They covered the great field of human knowledge.

16. Q. What is Oriental Theosophy? A. Supposed intercourse with God and superior spirits, and consequent attainment of superhuman knowledge by physical processes, and extraordinary illumination.

17. Q. Who was Cyril? A. He was Bishop of Alexandria in the time of Hypatia. He was a native of that city, and is described as fond of power, and of a restless and turbulent spirit. He persecuted the Jews, and finally expelled them from Alexandria.

18. Q. Who was Orestes? A. The Roman Prefect, or Governor, of Alexandria at the time of the occurrences narrated in Hypatia.

19. Q. Who was Synesius? A. A native of Cyrene, one of the chief cities of Northern Africa. He was a follower of Plato, and at one time an auditor of Hypatia. He subsequently embraced Christianity, and at the time of this story was Bishop of Ptolemais, the chief city of the Lybian Pentopolis, an association of five cities in Northern Africa. His writings have been much admired, both by ancient and modern scholars, and have obtained for him the surname of "Philosopher."

20. Q. Who was Heraclian? A. He was one of the officers of Honorius, the emperor of the western Roman empire. He put to death Stilicho, a Roman General of much ability who attempted to supplant Honorius. The Emperor rewarded him for this deed with the Governorship of Africa. He subsequently revolted against Honorius and invaded Italy. His enterprise proved disastrous, and after his return to Africa he was put to death at Carthage.

21. Q. Who was Amalric the Amal? A. He was one of the royal family of the Goths, the Northern barbarians that overran a large portion of the Roman empire. Amal was the royal family name of the Goths, and is supposed to signify spotless.

22. Q. Who was Philammon? A. A young monk of the Laura, who came to Alexandria to see the world and find his appointed work. He becomes a friend and pupil of Hypatia, but when in extreme need of spiritual help he finds no aid from her or her philosophy, and returns to the old faith and the Laura.

23. Q. Who was Pelagia? A. A woman of great physical beauty, the sister of Philammon, who, after a life of sinful pleasure, spent the latter portion of her days as a hermitess.

24. Q. Who was Miriam? A. A Jewess of Alexandria, and the mother of Raphael Aben-Ezra.

25. Q. Who was Raphael Aben-Ezra? A. A Jew by birth; a disciple and friend of Hypatia; subsequently a convert to Christianity.

26. Q. What particular phase of history does Hypatia represent? A. The conflict between Christianity, Judaism and Paganism at the commencement of the fifth century.

27. Q. At the date given in the opening chapter, 413 A. D., what had been the great ruling power in the Old World for several centuries, and was now in its decline? A. The Roman empire.

28. Q. Who was the last Emperor over the whole of the Roman empire? A. Theodosius the Great, who reigned at the close of the fourth century.

29. Q. By what was his reign signalized? A. By the complete establishment of Christianity and the downfall of Paganism in the Roman dominions.

30. Q. At his death how was the Roman empire divided? A. Into the empire of the East, with the capital at Constantinople, or Byzantium, and the empire of the West, with the capital at Rome and Ravenna.

31. Q. Who were the Emperors that succeeded Theodosius the Great, and reigned at the time of the story of Hypatia? A. Honorius, of the West, and Theodosius II of the East. Arcadius was the immediate successor of Theodosius in the East, but was followed by Theodosius II before the time of the story of Hypatia.

32. Q. By whom had Rome been taken and plundered three years previous to the opening of the story? A. By the Goths under Alaric.

33. Q. Who is the principal god of the Goths in Scandinavian mythology? A. Odin. He rules the heavens, and is the god of war.

34. Q. Who is Thor? A. The son of Odin, and the god of thunder and lightning.

35. Q. What and where is Asgard? A. The dwelling place of Odin and twelve of the other principal deities. It is on Midgard, the middle world between the region of ice and snow in the North, and a world of warmth and sunlight in the South.

36. Q. What is Valhalla? A. A place where departed heroes lead an immortal life of joy and festivity in the company of Odin.

37. Q. When and by whom was Alexandria founded? A. By Alexander the Great, in 332 B. C.

38. Q. What General of Alexander, after the death of the latter, became King of Egypt, and under whom Alexandria rose to the position of the greatest commercial city in the world? A. Ptolemy Soter.

39. Q. In whose favor did he afterwards abdicate the throne? A. In favor of his youngest son, Ptolemy Philadelphus.

40. Q. By what were the reigns of the two Ptolemies especially characterized? A. By the advancement of Literature and Science, of which Alexandria became the center.

41. Q. What two celebrated literary institutions were founded by them at Alexandria that are frequently mentioned in Hypatia? A. The Library and the Museum.

42. Q. Where was the city of Alexandria built? A. On a narrow

neck of land between the lake Mareotis and the Mediterranean sea, opposite the island of Pharos, which island was joined to the city by an artificial dyke.

43. Q. Which one of the seven wonders of the world was at Alexandria? A. The lighthouse called the Pharos, on the island of the same name. The material was of white stone, the height about 400 feet, and it is said that its light could be seen at a distance of one hundred miles.

44. Q. How was the city laid out? A. With great regularity. The city was intersected by two principal streets over one hundred feet in width, one extending from east to west, and the other from north to south. Alexandria was oblong in form, with a length from east to west of three to four miles, a breadth from north to south of one, and a circumference of about fifteen miles.

45. Q. Into how many parts was Alexandria divided? A. Three; the Jews' quarter, forming the northeastern portion of the city; the Egyptian quarter, in the western portion of the city; and the Royal or Greek quarter, forming the central and main portion. Nearly all the public buildings, except the Serapeum, were in this quarter.

46. Q. What are the principal public buildings of Alexandria referred to in Hypatia? A. The Serapeum, the Cæsarium, the Royal Palace, and the Museum.

47. Q. Where was the Serapeum located, and what was it? A. It was located in the Egyptian, or western part of the city, and was the temple of Seraphis, an Egyptian divinity. A large part of the famous Alexandrian library was at one time placed in this temple.

48. Q. What was the Cæsarium? A. It was the temple of the Cæsars, where divine honors were paid to the Roman emperors. At the time of Hypatia it was used as a Christian church.

49. Q. What was the Royal Palace? A. When Egypt was made a Roman province Alexandria became the city of the Prefect, and the Royal Palace was his residence.

50. Q. What was the Museum? A. It was an establishment founded by the two Ptolemies, in which men devoted to literature were maintained at the public cost. In the time of Hypatia it contained what remained of the Alexandrian library.

C. L. S. C. NOTES AND LETTERS.

In the December number of THE CHAUTAUQUAN there is a slight omission in the answer to the 56th question on the history of Cyrus. The answer, as printed, makes Astyages the *father* of Cyrus. Of course it should read, "Astyages, the *grand*father of Cyrus."

In some places where local circles of the C. L. S. C. were formed the first year the organizations have not been maintained. This should not discourage the members. Let a re-organization be effected, and the experience of the past made to serve in contributing to future success. We know of such cases, where the organization of the present year is doing vigorous and helpful work.

A lady member, formerly of Pennsylvania, writes from California: "I am teaching one of 'Uncle Sam's' Indian schools at ——— Indian village, and have twenty-five as bright little 'Los' under my charge as one can find in this country. The school was just organized the 1st of October, but the old people exhibit great interest, and the children are developing a wonderful ambition."

A member adds in a postscript to her letter, "I should like to tell you all about our difficulties and triumphs, but it would be unkind to trouble you." We beg leave to say that it would not be "unkind," but on the contrary it would be deemed a kindness. It is from the experience of those who are engaged in the practical work that much of the wisdom is to be gained for the future guidance of the C. L. S. C. Let no one hesitate to write freely, not only of triumphs, but of difficulties as well.

The benefits conferred upon those who take up the course for the good there is in it to themselves, and the new awakening for knowledge that results, we have heretofore referred to, but we cannot forbear quoting further from letters for the encouragement of others. We give below additional words that come to Dr. Vincent: One of the class of 1883 writes, "I have finished my first year, and have found the studies very beneficial to me. Had I known that such a Circle had been formed I would have joined the first year." Another says, "I am still enjoying the course greatly, and feel determined to continue it. I find that it is of great use to me in my life work. May God richly bless its originator." Another says, "I am quite behind with my memoranda, but am determined to keep on with the course. Indeed, nothing would tempt me to relinquish it."

In the January number of THE CHAUTAUQUAN Dr. Vincent is reported as saying that the correct pronunciation of the word "exquisite" is with the accent on the second syllable. A member of the C. L. S. C. writes: "I am sure that it must be a misprint, for certainly a majority of the people at the Round Table must know that 'ex'quisite' is correct." By reference to our stenographic notes of the meeting (but from which the published report was not made up) we find them to read in this particular, as follows: "A distinguished gentleman of Boston says exquis'ite for ex'quisite. Which is correct?" The decision of the matter was left with the individual members of the Round Table, and so far as heard from they agree with Webster in saying ex'quisite. The attempted vindication of the Boston gentleman is therefore really quite the contrary.

One of the questions to be answered in making application for membership in the C. L. S. C. is "if married, how many children have you under the age of sixteen years? This question is asked to ascertain the possible future intellectual and moral influence of this Circle on your homes." The reports already received from parents who are members of the Circle indicate a home influence that will extend into eternity. Many a mother will echo from her heart the words we quote from late letters received by Dr. Vincent. One writes: "As I glanced over the plan of study for the year and saw 'Biology' my heart was thrilled with joy, for but a short time previous, my oldest daughter had said 'we have Biology this year in high school, what is it? And I had been forced to answer, 'I don't know.' * * The year began. * * My daughter studied Biology in May and June. Our books did not arrive until late in June. So we studied in July and August, the vacation months; and as she was fresh from the study, and had her blank book of notes, we studied aloud, and you cannot tell how the hearts of mother and daughter were knit together in those days. Forty years and sixteen years! * * My daughter is a Christian, and as she read aloud in my book she would exclaim, 'How beautiful! I thought Biology couldn't have anything to do with the Bible.' * * And I blessed the wisdom and sagacity which included this book in the course." Another writes, "I think you are doing a grand work, one that is especially beneficial to mothers. I wish you God speed." Another writing for information, says, "I think of joining for the benefit of my children."

A member of the class of 1883 writes, "My memoranda is imperfect, but I have had no help, and a small library for reference. I am not discouraged, but shall, with God's help, prosecute the four years' course." Another of the same class says, "Whether I ever succeed in completing the course or not I feel that my one year's connection with the society has been a benefit to me. I am sure I shall in future be more careful about my reading. Life is not long enough to read promiscuously whatever falls in our way." A member of the class of 1882: "Please accept my heartfelt thanks for your exceeding kindness in offering to the public so rare a chance for education as is given to the members of the C. L. S. C. I am looking forward with great interest to the work of our third year. * * * I am determined to complete the course if life and health are spared." Another says, "Had it not been for the cheering influence of one of our mottoes 'never be discouraged' I think that I would have abandoned the course entirely; but it encouraged me to hope for better times and greater opportunities to devote myself to the course. I think that during the next year I will have more time to give to it." Another member says, "When we saw the reading we at first thought there was altogether too much history for plain country people, but on second thought we concluded that God had given us just as strong intellects as he had given to those who were in the cities and towns, and that if they could master the alloted amount of history, and appreciate it, so could and would we, and after reading for a month we are growing to almost love our work."

At the time the C. L. S. C. was organized, in 1878, Dr. Vincent presented a number of letters from eminent men throughout the country expressing a favorable opinion in regard to the scheme. For over two years thousands have now been giving the plan a practical test by undertaking the course of reading prepared. Their views are not matters of theoretical opinions, but are the outgrowth of an experience that has been personal, and must therefore convey a weight of authority that cannot be gainsayed. We quote below from some of the letters members have written on the subject. Says one, "I think the C. L. S. C. is the grandest organization of the present time for giving to the masses a general and needed education fitting or suitable for the intelligence of modern times." A member of the class of

1883 writes: "It gives me pleasure to say, that the 'Chautauqua course' has been most gratifying and successful in the direction wherein I looked for benefit. I know of no movement so helpful in certain ways to the masses. It will supercede the flashy literature of the day, and do away with the gossip, which fills up the idle hour. God bless Dr. Vincent and his fellow workers in this good cause." Another says, "I consider myself greatly privileged in having the opportunity of reaping the benefits of such an institution, and I think you, as the originator, deserve the earnest thanks and sincere gratitude of the vast number of women whose aspirations for mental and moral culture so far surpass their opportunities. I think future generations will 'rise up and call you blessed.'" Another writes, "Let me add my testimony to that of thousands, who consider the C. L. S. C. an inspiration. I consider it the *greatest boon ever received by American women*, and I know God gave you the idea. I say 'women' because I am one and know whereof I affirm. Its benefits are for all. * * * After hearing you unfold your great plan in the assembly chamber at —— a year ago last May, I came home rejoicing as only one can, who having once been a teacher, and having a thirst for learning, had for eighteen years been chiefly occupied in the nurture and training of eight children, with no time for reading more than the secular and religious newspapers." One of the class of 1882 says, "It is my intention to go on with the course even though I make such slow progress at times. After this course is finished I sincerely hope something of the same kind will be ready to take its place. It surely meets a want long felt. There are many, very many, that would find it simply impossible to do anything more than is now required. I for one am glad that we have the C. L. S. C."

C. L. S. C. ROUND TABLE.*

Dr. Vincent read the papers that had been handed in.

"I noticed that Prof. Holmes said the Bēdé Bible. Would he so pronounce Adam Bede, George Eliot's novel?"

No; because Bede is properly spelled Baeda, showing that at the time of its pronunciation in Anglo-Saxon, it was pronounced Bēda.

"When and where shall we probably get the Chautauqua story now being read by Pansy?"

I think that "Pansy's" stories are all published in a Cincinnati paper. I may add that this story is written for the uses of the Circle, and that it is to be enlarged—this is but the introduction—it is to be enlarged, and in the course of another year it will be put into book form, and be required to be read by every member of the Circle during the fourth year. There is to be a great deal in that story you have not caught a glimpse of yet.

"I dursent." I dare not.

"Frank Beard says, 'If I was a dog.'"

Well Frank Beard has a perfect right to say that. [Laughter]. It should be "were" instead of "was." Was implies fact; were, supposition.

"Prē'sentation, or prē'sentation?" Prē'sentation.

"Let the *person* rise and face the audience and speak so *they* can be heard." *He*, not *they*.

"Should have *took* time enough."

A similar mistake is corrected above. The past participle "taken" should be used.

"Which is correct, Sabbath or Sunday?"

Dr. Boardman in response to a call for his decision on this question, said it would open a theological discussion he did not care to take up.

"Demon'strate or dem'onstrate?"

Webster gives both.

"Had better, or would better go?"

Prof. Holmes.—I can't say why I prefer the latter way, unless for the reason that a very excellent teacher corrected me from "had better" to "would better" as a part of my earlier education. I heard some one over here say what I thought myself; take the "better" out from between had and go, and you can't say, I had go.

A voice.—The older form was "would better." The contraction was "I'd," but we changed that to "I had."

"To what extent should *r* be trilled in pronunciation?"

Ev*errrry* time before a vowel.

"Mīlan', Mi'lan, or Mĭlan'?" Mi'lan is preferred by Webster.

Is there such a word as "enthuse?" No.

"Do you say In'quiry or inquī'ry?" Inquī'ry.

"Is ill ever an adverb?" A lecturer said the other day, "work well and work ill," meaning *badly*.

Dr. Boardman.—If it were not for the negative which is interposed, I should quote the Scripture authority at the time of our last authorized translation: "Love worketh no 'ill' to his neighbor." That is not an adverbial use of it. "Work badly" is better than "work ill." But some do justify the use of "ill" in this connection.

"It is not the time or place to make a speech." It is *neither* the time *nor* place to make a speech.

"Some one speaking of Christ, said: He eat (ĕt) nothing." It should be *ate*.

"How is 'none' pronounced, nōne or nun?" Nun.

"What right have you got?" Cancel the "got."

"What is the proper pronunciation of 'pronunciation, and of plebeian?'" Pronunshiation, and plebē'yan.

"A lady remarked that she was to hear a lecture to-night on the 'antimony of expression.'" [Laughter.] She meant "anatomy."

"After singing a hymn, Dr. Talmage, of New York, will preach." After the singing of a hymn, etc.

"Nā'tional and rā'tional, or nă'tional and rā'tional? The former.

"Shall we say fōrward or fōr'ward?" Fōr'ward.

"Prayer (ai in air), or prāyer. The former.

"Is it good taste to begin sentences with the words 'now then?'" If that expresses your meaning it is proper to say it.

"When I went to the place which is now my place of residence." To my present place of residence.

"She don't make it like I do." [Laughter] How would you say that? A voice.—She does not make it as I do.

"Is it right to say 'it is real good?'" Really good.

"An instructor said, 'let your text-books at home.'" Leave, etc.

"Is the expression, 'a couple of centuries' elegant?" No.

"Should the word protoplasm be applied to living matter?"

Dr. Boardman.—In ordinary speech when I would not be specially careful, it strikes me that it would be quite proper to speak of living matter as protoplasm; but if I were to be exact in speech, and addressing so cultivated an audience as the C. L. S. C. always is, I should of course say *bio*plasm.

"Arkansaw or Arkan'sas?" I say Arkansas.

"Is it allowable at any time to end a sentence with a preposition?" When it is really a part of the verb it is proper.

"Is it ŏnly or ōnly?" It is ōnly.

"I have observed one of the professors use the word standpoint." I suppose it depends what you are at that point for. If it is a point from which to look, it is the best view-point, the best point from which to look. View-point has a little German sound.

Fitch on Memory is recommended to the members of the Circle. It contains instructions on the improvement of that faculty.

*Hall of Philosophy, Monday evening, August 9th, 1880, Dr. Vincent presiding.

It is not always easy to recognize the fact that there is something antagonistic in philanthropy and art. The essence of art is freedom and self-development, though there may be that voluntary subordination to a higher rule which is not incompatible with these. Practical philanthropy aims at making men better than they are, it may be by legislation, by persuasion, by inducements, but its end is always modification.—*Mrs. Marshall.*

THE USE OF THE WILL IN PUBLIC SPEAKING.

[The following is an outline of the first of a course of lectures on Public Speaking delivered at the Universities of Aberdeen and St. Andrews, and Allegheny College. The method, as the reader will see, necessitates a pupil. It requires practical illustration. It is somewhat after the manner of a manual of military drill. It is an intellectual drill, and a severe one, and, when fully carried out, constitutes a Training School for Public Speakers.]

The most satisfactory voice or delivery is not as a rule that which comes to the speaker without an effort or a thought of his own, it is that which he acquires by an exercise of his will. By an application of his will the speaker rids himself of the impediments that hinder him, and remedies the defects which mar his work; by a persistent use of the will he makes the attainments which contribute to his efficiency, and utilizes the accessories that are tributary to his highest success.

Having now struck a method of training for the student in Public Speaking, let us put it to the test. Let us test it in the acquisition of what the speaker needs first of all, and in many cases most of all—a good speaking voice. A few, a very few comparatively, have such a voice by nature, and even where nature confers the blessing of a voice of adequate strength, she seldom adds the desirable flexibility or modulation. So, whether it be a stronger voice or a more manageable one that the speaker needs, his only method of acquiring it is that of willing it into his possession. I say the only method, because this is the only method by which the speaker is enabled to appropriate, and really make his own, the new and necessary voice. All other methods fail in this crucial test of appropriation.

Take for example the method of imitative elocution. It proceeds upon the fallacious assumption that a good speaking voice may be acquired by acquiring the voice of an actor or elocutionist, and that in order to teach the art of Public Speaking you have only to teach the art of dramatic recitation. The failure of this method is no more conspicuous than the reason for the failure. The dramatic reader does not appropriate the voice which he has acquired by imitation from his "lessons in elocution." He does not assimilate it, does not make it his own. He cannot converse in it. It is the voice of a part, which the reciter or actor is playing. You will notice that the voice with which the dramatic reader informs the audience what he intends to read, is a very different voice from that with which he reads. It is only while the student in elocution is "speaking his piece" under the tuition of his coacher, that he speaks in the dignified bass, or the melodious baritone. If he happens to discuss the method he is pursuing he will demonstrate its absurdity by dropping it just where it ought to be of service to him—in his colloquial voice. That remains as undignified and as unmelodious as ever, and yet that colloquial voice, as we propose to show hereafter, is the speaker's main dependence. Furthermore the dignity of the recitation sounds as artificial as the want of it in conversation is natural.

The preacher may succeed in manufacturing a voice of some merit while imitating the elocutionist who drills him into, or drills into him, the voice of the ideal Hamlet. But when the preacher ceases to appear in his "part" and reappears in his pulpit, he reappears in his own voice, which may sound more like the vulgar falsetto of the grave diggers than the well-bred baritone of the Prince of Denmark. That the pupil in imitative elocution, or dramatic recitation, does not notice this is conclusive evidence of his self-deception with respect to the best method of securing a voice that will be as permanent as it is suitable, as available in conversation as it is in declamation.

The same remarks apply to the fallacy of assuming that you can acquire an adequate and enduring speaking voice by acquiring an adequate and occasional singing voice. The speaker's voice is a perpetual voice for perpetual use—the singer's and the elocutionist's is an occasional voice for occasional exhibition. The elocutionist's voice is the voice of the elocutionist, the singer's that of the singer, the speaker's that of the man. So that no dependence can be placed on lessons in imitative elocution, or dramatic recitation, or singing for creating a competent speaking voice, since the speaker must have a voice of his own, and that he cannot have unless he has a will of his own.

Another word of admonition with respect to what is not essential to the student in Public Speaking. He does not need lessons in bronchial anatomy in order to learn how to create a good speaking voice, or acquire an effective delivery. The anatomical illustrations in the books on elocution are of no more consequence than their triangles alive with tadpoles, or their pictorial examples in the awful art of gesticulation. A chart of the windpipe is of no more value to the public speaker, than a picture of a bagpipe is to the opera singer.

The Public Speaker has no use for the physiology of the voice. It is quite immaterial to him whether his voice is produced by the larynx or the calf of the leg. It is not of the slightest assistance to him to be informed that "nasality is produced by the lowering of the velum on one side and the lifting up of the base of the tongue on the other." He will get rid of his nasality, not by talking about it, but by talking without it. The only way to avoid it is—to avoid it. No drunkard was ever reformed by a diagnosis of delirium tremens. If there is no will of his own to appeal to, no appeal will be of any avail. You may make him weep, but you cannot make him act. You cannot reach a bad habit unless you set the will against it. A bad voice is a bad habit, to be got rid of just as any other bad habit is to be got rid of, by turning the will upon it; a good voice is a good habit to be acquired, just as any other good habit is to be acquired, by setting the will to acquire it. If your voice has a tendency to go up, you are to do with it just as you should do with your elbow if it has a tendency to go up at the table—put it down and keep it down by an exercise of the will. Will it down, and put it down, and keep it down until it stays down without a conscious exercise of the will.

We are after a habitual voice, therefore let the speaker compel himself to speak habitually in the voice which he wishes to acquire. Volume, flexibility, modulation, compass, control, variety—these can all be acquired by willing their acquisition, and this is the only method by which they can be satisfactorily acquired.

Passing from a defective voice to a defective use of the voice, let us try our method upon one of the most common and most serious vices known to Public Speaking, the vice of indistinctness. Nor is the defect more common than a popular remedy for it, which we here propose to combat—earnestness. It is maintained that in order to speak skilfully and effectively, the speaker has only to be "in earnest" and "full of his subject," just as it is claimed that sincerity is a guarantee of success, or feeling right is a warrant against going wrong. The one theory is no more preposterous than the other. Facts are against both. The fact is that those speakers who are most thoroughly "in earnest" and most intensely absorbed in what they are saying, are in many instances, for that very reason, the most difficult speakers to hear. In proportion to the importance they attach to what they say is the difficulty of making themselves heard. It is the terribly "in earnest" preacher who bursts into tears in the process of uttering the inarticulate sentiment which affects him so deeply. The ancient adage is certainly reasonable, if you would make your hearer cry, you must cry yourself, but certainly if you would have your

hearer know what you are crying about you must tell him. The speaker's emotions should be as intelligible and coherent as his thoughts. Of what use your earnestness if it be inarticulate? It may be inarticulate earnestness.

This suggests another popular panacea for the ills the speaker is heir to. It is this—in order to be right, all he has to do is to "be natural." Here again facts are fatal to the theory. In a majority of cases to be natural is to be wrong, since a bad articulation is just as natural to the many as a good articulation is to the few. The same may be said of all other bad habits whether of voice, or dress, or address. It is quite as natural for some of us to be precipitate and inarticulate as it is for others of us to be deliberate and distinct. Some are, and some are not, endowed by nature with a physical apparatus admirably adapted for articulation and enunciation. The Earl of Chatham and Henry Clay were. Charlotte Cushman said "God gave her a mouth of peculiar conformation which enabled her without an effort to make a whisper heard to the remotest corner of a large auditorium." Demosthenes, Plunkett, and Edmund Kean, however, were not blessed with so advantageous a natural conformation, and it was not by simply being in earnest and absorbed in their subject, but only by an effort of the will, conscious, energetic and persistent, that they were enabled to make themselves distinctly heard. Curran was quite right when he declared that his shrill and fractious voice was "in a state of nature," and he was quite right in resolving to bring it out of a state of nature into a state of efficiency, which he did by bringing his will to bear upon it.

Another function of the will in Public Speaking is to compel the mouth to form the words and the throat to make the tones. This is indispensable to a good articulation. No words formed by the throat can be articulate. The attempt to form both the tones and the words by the throat is a habit of inarticulate earnestness. It is so "absorbed in its subject," and so intent upon "being natural," that it takes no account of this fundamental law of nature. To obey it will require an exercise of the will to which the "earnest" speaker has hitherto been a stranger. This so far from being the child's play of lessons in dramatic elocution is a man's work in self-discipline and self-culture.

This method of cultivating the voice leads to the cultivation of an ear for it. Without such an ear for his voice, the speaker will know no more about the deficiencies of his voice than the deaf person knows about the deficiencies of his. Command over the voice is impossible without familiarity with it. The deaf mute is mute from ignorance of his vocal organs. He does not know that he has the organs of speech, much less the power to exercise them. It is only recently that an attempt has been made to remove this ignorance and awaken this sense of power—or in other words to get at and get hold of and induce the mute to lay hold of his will. Much of the prevailing indistinctness, and inarticulate earnestness is owing to a similar ignorance and inertia. The speaker has never made the acquaintance of his own voice. Like the deaf person he does not know where it is going, or where it is failing to go, what it is doing, or what it is failing to do. It is only by an exercise of the will that the speaker can ever acquire a good ear for his own voice, or train his own voice or elocutionary instinct.

The student in Public Speaking cannot begin too soon after his voice is what is called "formed" to look after it with his will and keep an anxious and alert ear upon it. Like every other habit, that of indistinctness or slovenliness of delivery, will grow with the growth and strengthen with the strength. A case in point occurs to me. It will serve as an illustration and an admonition. It is that of a preacher who had this habit of indistinctness while a student, but would give no heed to criticism. He considered such matters beneath one so much "in earnest," so pious, and so deeply "absorbed in his subject." The consequence is that his precipitate and incoherent enunciation has become so old a habit that he can no more get rid of it than he can get rid of his obstinacy. Now, this gentleman comes up to the requirements of the popular opinion on the subject of Public Speaking. He "throws himself with his whole heart and soul," and we may add body, "into his work." He "forgets himself and thinks only of his subject." He has taken expensive lessons in dramatic recitation and gesticulatory gymnastics. He can "render" certain passages of Shakespere with almost as much imitative distinctness as his coacher. Nevertheless this elaborately educated and expensively equipped preacher is afflicted with and afflicts his hearer with one of the most defective styles of elocution known to Public Speaking. He has no ear for his own voice. His elocutionary instinct is at its lowest point of development, if its development can be said to have begun. His will is useless to him. It is torpid. To cure this defect would be to quadruple his usefulness. But it is too late for the cure. It is almost impossible to control the voice after it has had its own way throughout the formative period of youth.

Public Speaking is like aiming. It is a mental exercise that cannot be reduced to rules. The Indian becomes as accurate with the arrow as the Englishman with the rifle. The root of this is a concentration of the will which baffles analysis, and defies rules and needs none. But it is none the less, nay, it is all the more, useful as a fact to the speaker who should make the most of it in his art. His success like that of the juggler with his knife, will depend upon the intensity with which he turns his will upon the mark. By such an exercise of the will he works up an ideal, and works toward it. The imagination is stimulated by it, the intellect aroused, and the animal galvanic currents set in motion.

MODELLING IN CLAY.

To the Modellers at Chautauqua in 1880, *greeting:*

May I recall to your memory certain things that I tried to make clear while we worked and talked together? We found by actual experiment that a most common mistake of beginners in modelling or drawing, is to ignore the great mass of the brain. We found by actual weight that the head has nearly four times the bulk of the face, and yet, curiously enough, this is not fully realized without practice in elementary art, since young and old, ignorant and cultured, will be apt to produce the same prehistoric types, all face and no head, such as one sees in the works of primitive and half savage peoples. Most of you may remember a drawing on the black-board, by some small boy, which I preserved during the modelling classes, to exemplify this mistake which may be called universal. We found, however, that by the right kind of practice and observation, the beginner could pass through the stages of art that have occupied centuries, and acquire in a few hours cultivation enough of eye and hand to make distinctively human heads, instead of monstrosities, in clay.

But first we had tried some simple exercises in geometry —corner stones for our temple of knowledge. Then we made a few shapes that were representative of all possible kinds of surface.

Convex, Plane, Concave.

We made, moreover, many little balls, and other elementary practice in handling and shaping the clay. Let me suggest here that babies at home may be made very happy in making little balls of many sizes, which they will often name for members of a family. After these have been dried and hardened in the oven or fire, it is delightful to see how

much more they will be to their makers, than things bought. To skillfully make balls, too, is a long step toward good modelling—and quite enough result to reach with the little children during weeks or months.

You saw how all the little crumbs, as they dried, could be mixed again with water and used for modelling; and you found how a little care to avoid leaving dry clay on the hands, would enable you to work with neatness and comfort.

The objects modelled by the class in the first attempts generally fell in pieces, but those of the subsequent lessons of each pupil, were better constructed, and could have been baked, had Chautauqua possessed among all its other advantages, a terra cotta kiln.

For those whose object was school or Kindergarten work, there were further exercises according to Froebel's plan of dividing cubes[1]—by cutting cubes of clay with a fine wire. There were birds and beasts enough made to start a small aviary, and a fair zoölogical garden, and in the midst of all was one voted to be "the connecting link." Several people seeing some of these things through the windows, came in to inquire the price. A majority of the members of the modelling classes chose the more artistic branch of work, on heads "*in the round*" and in *bas relief*.

For one exercise a number of the modellers split their heads (their clay heads) with a wire, and attached one of the halves to a clay background. It was easy to see that this half head on a ground did not constitute an artistic relief. Something more was to be done, and it was found that a conventional flattening of portions, or all of the work was requisite.

Medallions were made in many degrees of relief, from very low relief like coins, to "alto-relief." The classes all did some plaster work also, to illustrate the process of making moulds suitable for terra-cotta medallions.

Let us hope that many eyes have been aided by these lessons to see with a truer culture the beauties in works of art, and in the marvelous human countenance.

Eagleswood Art Pottery, Perth Amboy, N. J., Jan. 8th, 1881.

TO BE CONTINUED.

10x1=10.

CHAUTAUQUA DIVISION OF

LOOK UP LEGION.

MOTTOES.

Look up and not down;
Look forward and not back;
Look out and not in,
And lend a hand.

PLEDGE.

We, the undersigned, wish to be manly (or womanly) and Christian in our character, and we therefore pledge ourselves to be as far as we are able, truthful, unselfish, cheerful, hopeful, and helpful, to use our influence always for the right, and never fear to show our colors. We also pledge ourselves to use our voice and our influence against intemperance, the use of vulgar or profane language, the use of tobacco, affectation in dress or manner, disrespect to the old, ill treatment of the young or unfortunate, and cruelty to animals.

We will aid and support each other in carrying out this pledge and the spirit of our mottoes.

Address all letters to Mary A. Lathbury, Orange, New Jersey.

We promised to describe this month a work for older members of the L. L. which would be of value to pastors of churches. It is, in fact, "a Pastor's Aid" of a most efficient kind.

The extract below (from the *Christian Register*), is a happy description of a real work, as we have ourselves witnessed it. It is called the "Correspondence Club," of the South Congregational Church, Boston, Rev. E. E. Hale, pastor. This church has "the love that seeks and follows" the unfortunate and sinful that drift away from it into other cities and states, a system of following by means of correspondence with fraternal clubs here and there, who are always ready to "lend a hand," and help to capture a soul astray. They also enter heartily into mission work—home and foreign—and keep records that are most helpful to a pastor. The happiness that this work gives to those who engage in it is one of the pleasant features of the work, and they do not yet know how it is forming their lives into shapes of beauty and truth.

CHURCH WORK.

"What do you mean," said Nahum, "in talking of a club which does the work of a church?"

"I mean what I say," said Paul, rather more gruffly than was necessary. "You do not suppose the minister does it all."

"No," said Nahum, meekly. "I know that the minister is expected to train the church to do without him as well as with him. I dreamed one night that I was ordained; and when I woke up, I was sure they would do without me quite as well as with me."

"Tell him about your meetings at the Church of the Life Eternal."

"Why," said Laura, "there is not much to tell, nothing to be put in print. I think it has run five years now. The minister got some of us girls together; and he said there was a good deal of work that we could do as well as he, that he wanted us to meet as often as once a week, to see what we could do. We have pretty rooms at the church, and he meets us there. When he wants the whole club, it is summoned. For instance he wanted to send a library out West; and every member of the club brought one or two books, and *Harpers and Wide Awakes*, and the whole club met to cover books and paste in the name, and box them. That was a gentleman's night. Some of the boys did the printing; and the big boys furnished the packing cases and nails and hammers, and saw to the expresses. But, generally, it was only a staff meeting. The staff were five or six girls. The minister, for fun, used to call himself 'chief of staff.' They met at eleven, Wednesday morning, if he did not want them oftener. They wrote more than anything else. But they did anything they were told to do. There is the least possible bit of system about it. We keep a record book and a letter-book, and we index up to our record."

"'Index up to our record,'—how grand that sounds!" said Sam. "Still, I see the use of it." And Colonel Ingham asked if, at the next meeting, she would not bring the record-book, which she agreed to do.

But there was very little in it which it is of any use to copy. There was the regular entry of the names of the girls who came, sometimes one, sometimes ten,—apparently, as there was more or less to do. The entries of work done were very various. These are a few of them from two or three days:—

The Ladies' Charity Committee were here, and work was to help them.

Mr. X. dictated notes to A, B, C, D.

Letter read from Rev. C. H. A. Dall, concerning the Calcutta Christmas-box. Letter copied in letter-book.

Wrote twelve copies of the following letter, in behalf of Mr. Thornton's Industrial School. [Copy of the letter.] Directed them to E, F, G, etc.

The next week there comes:—

Counted the money left in the charity-boxes last week for the Calcutta box. $7.52.

The sub-committee for to-day will dispose of this money for the toys, etc.

Another week, the record is:—

Wrote letters to H, I, J, K. Wrote four announcements of the Christmas service to send to the newspapers. The letter to Mr. Thornton is to ask if we can help them with

[1] The whole series of these divisions of the cube can be seen in the Krauses' Guide—E. Steiger, N. Y., publisher.

books in their Industrial Mission. The letter to Mr. Sprague is about the music for Christmas. We sent Miss Bell —— dollars, which Mrs. Holyoke had sent for Houker's Island. Miss Bell has the mission there.

There is to be a meeting of all the old members of the parish and all the present members to celebrate its fiftieth anniversary. We wrote letters of invitation to several of the old members.

Mr. X. dictated his annual report to Fannie Strong.

Appointed a committee of the whole Club to take charge of our table at the Longitude Fair.

That ought to be enough to show that once a week or oftener there will be opportunities enough when a handful of well-educated young women can lend a hand, if they want to. A good deal will depend on their regularity. They will themselves know where to turn for assistance, if assistance is needed. There will turn up a great many things where, if the minister of a church has to arrange for them alone, he will say, "No," and say so rightly. He has much more important matters in hand. But if he knows that five or six intelligent young people will meet him the next Wednesday, ready for just such enterprise, he will drop the note in a basket, and the next Wednesday he will say "Yes," and that thing will be done. To Mr. Dall in India, the arrival of a box with a few dollars' worth of toys in it is of far more interest, if he knew that a dozen young people have interested a circle of friends in it, than if he supposed an old college friend had given an order for it at a toy-shop. And the same might be said of every one of the enterprises here alluded to. It is not, of course, the magnitude of the enterprise, it is the temper and heart of the effort, which gives it the value.

As Paul turned over the books, he found at the end of each winter, the general order of the minister which closed the series of annual meetings. He read one of these aloud:—

It is the last day of regular office-work, and the chief dictates the following farewell *General Order* to the staff:—

"1. The chief of staff heartily thanks the young ladies for their prompt and faithful attendance, and the willingness they have shown to take part even in the humblest labors.

"2. The work of the winter has not seemed important in any single line; but nothing can be called unimportant in a world where the finite and infinite are so closely mingled that no angel of light would venture to say where one begins and the other ends.

"3. Especially in the work of a Church of Christ, is it impossible to say that anything is small. All other organizations claim the privilege of limiting their own field. This is too apt to end in a wish of their officials to keep people out. As Mr. Dickens said, their effort is 'how to do it.' We have had an instance of this in our work here this winter, in the failure of the Sailors' Home. But the Church of Christ must never admit that anything is impossible. If it fails, it is only because it has not worked in the right way. It may limit its territorial field, as we do. But, within that field, it must not say that anything is impossible. It must not say that people are too bad to be helped, nor may it say that anything is hopeless.

"4. The Church also must, of course, recognize that, as nothing is great to God, nothing is small. As we undertake to work in and for the Church, we must be as ready to attend to the least detail as to the most brilliant service. The blacksmith's boy who shoes the field-marshal's horse may be in a duty more important than that of the color-bearer or the trumpeter.

"5. The chief of the staff begs the young ladies never to fall into the habit of questioning anxiously about what they have done, if only they have done it in good faith, for the best they knew, and with all their heart. God could carry out any of his purposes without our help. But he is pleased to employ us, and that should be honor enough for us. As between duties, this is certain, that we are to choose the duty which comes next our hand rather than wait for an uncertain duty in the future. As between two duties, both next our hand and of equal importance, we may choose that which pleases us most, or for which we are best fitted. If we have made this choice faithfully, it then becomes God's appointment, and he is willing that we should leave the issue with him. What we call failure he may call success, and what we call success he may call failure."

MUSICAL DEPARTMENT.

My object is to make the people of this country and their children, sing, and to make them sing for noble ends.—*John Curwen.*

TONIC SOL-FA.

If I hold up before a class, either of children or adults, several objects of different colors, as red, blue, and yellow, the colors will be distinguished and named without hesitation. If I produce in their hearing a series of tones, say 1, 4, 6, 5, 7, 8, of the scale, probably not one who listens can describe or name the tones, although the class may include several who have studied music, and sing or play. Why this difference?

It arises simply from the fact that colors have been observed, compared and named from the earliest dawning of the faculties. Tones have never been so listened to and analyzed except by those who have made a special study of music, and not usually in any adequate degree even by them. If the ear had been as carefully trained as the eye, the ability to distinguish tones would have been as universal as that of distinguishing colors. Indeed, it is questionable whether, under such circumstances, there would be as many *tone-blind* people as there are now color-blind.

This sets forth, in a word, the genius of the Tonic Sol-fa system. *It is a study of tones.* This cannot be truthfully claimed for the old methods. Placing before the pupil, as they do, at the very outset, the difficulties of an arbitrary and complex system of notation, the result is inevitable. The one supreme object of the student must henceforth be to conquer those difficulties and acquire the mastery of the signs; i. e., to *read* music. The Tonic Sol-faist has a higher ambition from the very first step. He makes a study of tones, of chords, of all possible combinations of musical effect. He desires to possess himself of the world of music. To simply read music in a blind, mechanical way, he regards as unworthy of his thoughts. He expects to penetrate into its mysteries; to follow intelligently its changes of harmony and key; to think music; to write down what he thinks or what he hears; in short, to have as complete command of that subject as he has of any other. All this is true not only of the advanced student, but equally so of the beginner, in his degree, and in all stages of progress to the end.

The immensely superior results of the Tonic Sol-fa system are chiefly due to its simple and philosophical notation. The difficulties of the staff notation are not generally appreciated. We were born into it, so to speak, and have grown up with the idea that it is as much a part of music as music itself. Although conscious that it was a formidable obstacle in our path, yet we have no more dreamed of its removal than we have expected the mountain to be leveled which stood between us and our journey's end. As the mountain must be crossed in order to reach our destination, so (we have supposed) must the staff notation be conquered before we could enter the world of music.

Nearly all the difficulties of the staff notation are artificial. They are not inherent in music itself, but have grown out of the imperfections, or, rather, the limitations of musical instruments, which require mechanical appliances to represent twelve different scales, when there is, in reality, but one scale. As far as the intervals are concerned, there is not the slightest difference to the singer between a song in the key of C and the same song in the key of D flat. But to the player every note is changed. One key seems simple and the other complicated. *By the staff notation, this burden of complications, which belongs exclusively to the instrument, is forced upon the singer.* The mere statement of the case is

better than an argument. It is its own *reductio ad absurdum*.

The Tonic Sol-fa system follows the order of nature. As there is but one scale or alphabet of tones, which is precisely the same in form, whether it be sung higher or lower, so there is but one scale represented. The learner is surprised to find that the old difficulties have vanished. The dreaded thorns have all turned into roses. Moreover, because the system is true, it is also philosophical. Starting out with the sound principle that there is one scale instead of many, the system acts as a commentary on the difficulties of the higher orders of music. Instead of being restricted, as was at first expected by its founders, to the study of elementary music, it proved to be, in more advanced music, of the nature of an interpretation; a delightful means of more fully comprehending the thoughts of the greatest masters. Hence all the Oratorios, Handel's Messiah, Samson, and a dozen others, Haydn's Creation, Mendelssohn's Elijah, the Masses of Beethoven and Mozart, the Passion-Music of Bach, the finest English and German choruses and glees, in fact, all standard works for the voice are published in the Tonic Sol-fa notation.

Beyond this, another result has followed, which is really most surprising. Those who learn music by this, which was thought to be a method for the singer exclusively, find it to be so much more truly an avenue of intelligence that they also prefer to use it for instrumental music, and therefore the catalogue of Sol-fa publications embraces all kinds of music for the organ, piano, and other instruments.

But it must be remembered that the notation, though an essential feature of the Tonic Sol-fa system, is by no means the whole of it. Its study of tones is comprehensive. It teaches not only how to sing them and how to read them, but how to listen to them and to write them. It makes a separate study of time, using a system of names for the purpose that were first invented by the French. It studies tones by chords, thus leading to an appreciation of the principle of harmony. It shows how the grouping of tones about the sixth of the scale produces the plaintive effect which we call minor. In a word, it develops all the musical faculties by processes that are uniformly easy and agreeable to the learner. After the Tonic Sol-fa system is thoroughly mastered, reading by the staff can be gained almost by an hour's study, because *music itself* has been mastered, and when that is the case, the question of representation is entirely secondary.

Reports of the awakening of interest in Tonic Sol-fa throughout the country are very encouraging. The barriers of prejudice are fast disappearing, and those who are to begin to teach the system, perhaps with many doubts and fears, find the work so delightful, and the interest and progress of their pupils so much greater than by the former method, that a feeling of enthusiasm soon takes the place of the old timidity.

Letters for the Musical Department should be addressed to T. F. Seward, Orange, N. J.

Music is a convenient vehicle for *conveying* and *impressing* the lessons of the Sunday-school. It is a most powerful aid to *memory*, serving to render indelible what would otherwise be dissipated and lost, because in childhood the mind is plastic and in its most receptive state; the emotions, the sympathies, are in full play; voice and ear, so obedient to external impressions, are flexible and susceptible to cultivation.—*Musical Herald.*

An old-fashioned Christian says, "Too much singing in an unknown tongue is what ails church music."

EDITOR'S OUTLOOK.

THE curriculum of study in any school or college is the result of careful thought and arrangement. Educators in every enlightened age have regarded it a matter of the highest importance and of directest bearing upon all educational success. They have emphasized the importance of the student's preparation by previous study and instruction for entrance into each new department of inquiry.

Cæsar and Virgil before Livy, and Anabasis before Plato, outlines before minutiæ, and things elementary before things subtle and profound. This is harmony with the laws of mind, and hence the way of mental development.

Profiting by all past study and experience, and with not less care and thought, the C. L. S. C. course of study has been adopted. Ranging as it does over a wide field, it everywhere observes these natural, necessary principles. By reference to the studies of this course for the single year of 1881, published in the first three numbers of THE CHAUTAUQUAN, it will be seen that in the department of history there is given a general history and ecclesiastical history in outlines; then comes biographies, the most attractive and easily remembered form in which history can be studied.

The student is introduced to the wonders of Physical Science in what is truly a "Science Primer," and afterwards is brought face to face with its deeper mysteries in the lectures of men competent to perform the task in the simplest and clearest manner.

In the limitless field of literature it will be observed that not a selection which is not classic (first-class) is to be found in the whole course. Because all later literature is debtor to all earlier literature; because, without Homer and Virgil there could have been no Milton and Tennyson, without Cicero and Demosthenes, no Gibbon and Macaulay, it is therefore the proper order to place ancient classics before modern classics. The reader is thus in a position to note the influence of the literature of one age upon that of another. He may make independent observations of literary changes and development.

Theology is taught upon principles and by methods logically the same. Throughout the entire scope of the year's work there is the evident design to provide everything in the most attractive and practical form. The lecture method is largely, but not exclusively used. In the great universities of Europe, and in some institutions of this country, by lecture is the only way in which instruction is given. Furnishing in condensed form the best thoughts of eminent thinkers, its excellency as a method cannot be questioned. However, the C. L. S. C. course is not a university course, but is vastly more popular in its character. The question-and-answer method now being employed has the admirable quality of directing attention to the points of greatest importance, and of fixing them in the memory. But perhaps the culmination of popular methods is the conversation. The naturalness and charm of this manner of teaching enlists the interest of the student at once. Our readers now at work upon "Conversations on Creation," are prepared to appreciate this statement. It has the high authority of Plato and other Grecian philosophers, who chose this method of communicating their thoughts to others. Let not the member of the C. L. S. C fail to recognize the system pervading the whole plan of the work he has set out to do. He is on an ascending plane, and is to make the ascent by methods eclectic, and the most approved of the times.

WITHIN the past twenty-five or thirty years there has been a wonderful enlargement of the sphere of women's work. A little more than a quarter of a century ago the kitchen and the factory, with an occasional term of school in

the summer season, afforded about all the opportunities of employment available for women. But now all departments of industry for which women are at all fitted are open to them, and in some of these they almost monopolize the field. Our public schools, to use an Irish mode of expression, are almost exclusively *manned* by women, while they stand in throngs behind the counters and desks in the marts of trade as clerks and book-keepers, abound in telegraph offices, and in government departments, and in addition to this are rapidly making their way into the professions of law and medicine, and even into the ministry in some of the denominations. The opening up of the great field of industry to women is but an act of simple justice that society has been slow to perform. Women should have the right to do anything they can do well, and should enjoy equal opportunities with men in laboring to secure a livelihood. But in entering the open door of industry they are received, not as women, but as laborers, and as industrial laws show no courtesy to sex, they must compete with men both in reference to the quality and quantity of their work. To do this successfully they must be thoroughly qualified by careful training for the occupations which they undertake. In the struggle for existence which is always going on in human society as well as among the lower orders, the individuals possessed of the best endowments are surest to succeed. And hence it behooves parents to see, not only that their sons are fitted for their several vocations, but also that their daughters are properly trained to be self-reliant. We would have every girl taught some form of industry, or adopt some profession, so that when she comes to maturity she will be as thoroughly qualified as the boy "to take care of herself." A better era of social life will dawn upon us when every woman, as well as every man, is thoroughly qualified for self-support.

A NEW departure in Sunday-school work has recently come to our notice. The Rev. Edward Everett Hale, pastor of the South Congregational Church of Boston, Mass., has organized in connection with his Sunday-school a class for special instruction in regard to the duties of citizens to the State. The class, which meets in one of the lecture rooms of the church in connection with the regular Sunday-school, is in charge of a prominent lawyer, who is a member of Mr. Hale's congregation. It had been announced that the class would be composed of young men, but at its formation five young ladies presented themselves for membership and were duly enrolled.

While we would by no means be in favor of secularizing the work of the Sunday-school, but would rather if possible impart to it increased spirituality, we see no reason why instruction on such topics might not be imparted to advanced classes with salutary effect. Every Christian owes certain duties to the State, which in their sphere are as important and imperative as those he owes to the church, having received the divine sanction and endorsement. The Master enjoined upon his followers to "Render to Cæsar the things that are Cæsar's, and to God the things that are God's." The Apostle Paul declares that the "powers that be," *i. e.*, the various forms of government, "are ordained of God." The discussion and consideration of the fundamental principles of these God-ordained institutions cannot be foreign either to the pulpit or the Sunday-school. Neither are they unfit topics for conversation on the Sabbath day. The new experiment of which we write is certainly worthy of candid consideration by all fair-minded people. Mr. Hale is a minister whose zeal in all good things keeps him constantly employed in devising means to elevate and benefit the rising generation, and he does nothing for the sake of creating a sensation. He is the author of the well known work entitled "Ten Times One are Ten," to helpful hints obtained from which the Look Up Legion owes its origin.

THE literary world has sustained an irreparable loss in the death of the eminent novelist, Mrs. Cross, who is better known to the public under her *nom de plume* of George Eliot. Her death occurred at her home in London, on the evening of the 22d of December last. She was born in Warwickshire, England, in 1820, and her maiden name was Marian C. Evans. Her father was a Presbyterian minister, and took great pains to secure for his daughter a liberal education. He paid special attention to her literary training and she made such rapid progress in this department that at the age of eighteen she was a regular contributor to several newspapers and periodicals. When she was about twenty years of age her parents died, and she went to London to engage in literary pursuits. She at once obtained employment and soon became a contributor to the *Westminster Review*, and was afterward, for a time, associate editor of that periodical. For nearly twenty years she toiled in the field of general literature, and during this period translated Strauss' "Life of Jesus" and Feuerbach's "Essence of Christianity." Her first work of fiction was entitled "Scenes from Clerical Life" and was published as a serial in *Blackwood's Magazine* during 1857, and appeared in book form in the following year. This was followed by the publication of "Adam Bede" in 1859. This powerful novel at once gave its author a place among the foremost writers of fiction in England. It was speedily translated into both French and German, and also passed through several editions in this country. From this time onward her success as a novelist was assured, and her works met with a most flattering reception from the public. She thenceforward devoted herself almost exclusively to the writing of fiction. After "Adam Bede" came "Silas Warner;" then "Romola," "Felix Holt," "Middlemarch," "Daniel Deronda" and "Theophrastus Such." Her two poetical works, which she valued more highly than her novels, "The Spanish Gipsies" and "The Legend of Jubal," were published respectively in 1868 and 1871. Her receipts from her publications during her literary career amounted to about $160,000.

As a writer George Eliot has a style and method peculiar to herself. In her works one does not find the broad, sunny humor and grotesque caricature which abound in the novels of Thackeray, nor the minute descriptions, sparkling wit, and laughter-provoking mirth which characterize the pages of Dickens, but she excels in the faithful portrayal of the quiet scenes of humble rural life, and the personages who appear in her pages are so real and life-like that we at once feel at home in their society. She also displays extraordinary skill and clearness in the delineation of character. A pure and lofty sentiment pervades all her writings, and her style of construction is more distinguished for strength and force than for grace and beauty. She everywhere weaves her own thoughts into the thread of the story, and the chief actors often speak her sentiments and advance her theories of society and life.

SELF-CULTURE, as the term is ordinarily used, implies the endeavor that is made on the part of the individual for the unfolding and perfecting of his nature. It differs in this respect from the culture obtained through schools of learning, in that the latter is largely attained by means of instruction and training received from others, while the former is achieved mainly by the personal energy of the individual in the use of the means at his command. Both have the same end in view, and aim to accomplish the same results, viz.: the complete development of all the capacities and powers of the man so as to fit him for the highest possible efficiency in his sphere of life. Culture in our higher institutions of learning is attainable only by the few. By far the larger part of mankind have neither the time nor means at their command to enable them to secure the benefits which result

from pursuing an academical or collegiate course of study. But self-culture is possible to all, inasmuch as every nature is susceptible of improvement. Means for self-improvement abound in every condition in life, so that self-culture is possible even amidst the most unpromising environments, if the individual is only possessed of firm determination and untiring perseverance. The great deficiency in culture which exists among the masses arises, not so much from lack of opportunities for improvement, as from an absence of a disposition to make a wise use of the means and advantages at their disposal, and to utilize them for the purpose of developing the potential energies of the soul so as to insure the highest possible perfection of the mental and moral powers.

One great design of Chautauqua has been to foster a spirit of self-culture among the people of this country, and the C. L. S. C. is the outcome of the endeavor to devise a practical plan for inducing and enabling those who are actively engaged in the duties and business of life to enter upon a course of reading and study for self-improvement. The idea has hitherto been too prevalent that the masses need no other culture or training than such as is necessary to fit them for their various trades and vocations, and hence many have sought for no higher state than that which enables them to pursue their occupation successfully. But the ground of a man's culture lies in his nature and not in his calling. His trade is not the chief end of his being. His great work is to develop himself, and not to lose his self-hood in his occupation and thus become a mere animated machine. The man is more than methods of work. Only as the man is perfectly developed does he become thoroughly competent to perform aright his work in the world.

But we must not forget that there is a culture of the heart as well as of the head, and that self-culture in the moral sphere of our being is closely allied to that of the intellectual department of our nature, and that the perfecting of our intellectual improvement must be accompanied by a corresponding elevation and advancement of the moral faculties. Any system of self-culture that falls short of this is partial and defective.

BISHOP FOSTER'S book, "Beyond the Grave," ought to be of interest to every Chautauquan, inasmuch as it owes its origin to Chautauqua. It is composed of a series of lectures delivered at the Assembly in 1878, which were taken down by our stenographers, as the words fell from the lips of the eloquent speaker, and were first published in the ASSEMBLY HERALD of that year. They were afterwards issued in book form. The problem of the future life and the mode of existence after death are the themes discussed in this volume. The Bishop's treatment of these subjects is the reverse of the dogmatical method usually employed by churchmen in the discussion of theological topics. In the brief preface he states that in these lectures "Authority is not once evoked to silence or answer an objection." Bishop Foster is decidedly averse to dogmatism in doctrine, and boldly declares "that no doctrine can deserve faith, except on the ground that the reasons for accepting it are more convincing than any that can be adduced for rejecting it." After such statements we are led to expect a candid and thorough examination of the subjects under consideration, and are not disappointed. Objections to the doctrines discussed are fairly stated and then are answered in a manly, masterly manner. Difficult points are not hidden from view, or lightly passed over, but are given due prominence and are fully elucidated. He appeals, not to the imagination, but to the reflective reason as the arbiter in the case; he does not seek to kindle the emotions, but strives to convince the judgment and to place the doctrine of a future life on a reasonable basis. In his treatment of these subjects the author proves himself to be a skilled logician, a powerful reasoner, and an able defender of the Christian faith.

It is impossible in a brief notice like this to give a summary of the arguments employed in proof of these doctrines, or even to mention the many excellencies of the book. We can only say that in our opinion it would be difficult to find an abler exposition of the doctrine of the future life than that which is presented in this volume. The lectures are vigorous in style, apt in illustration, and abound in cogent and convincing arguments. The book has been subjected to severe criticism in some quarters, largely, we think, because it deviates from the dogmatical methods usually employed in the discussion of theological themes, and because the critics do not deem some of the statements made to be in harmony with the doctrines of the church which Bishop Foster represents. His views are eminently Pauline, both in reference to the resurrection of the body and the mode of man's immortality. His conclusions in regard to both of these subjects are in complete accord with those of the great Apostle to the Gentiles, whose orthodoxy no one presumes to doubt. The lectures received the highest encomiums when delivered at Chautauqua, and are worthy of being widely circulated and carefully read.

NEVER before in the history of the country was the outlook of the temperance cause so full of encouragement as now. The numerous temperance movements which have taken place in the past few years, such as the Women's Crusade, the Murphy movement, and others of a kindred nature, although apparently temporary in their character, have left an abiding influence behind them, and have resulted in a marked increase of temperance sentiment in the land. In addition to this, the permanent temperance organizations, such as the National Temperance Society, the Women's Christian Temperance Union, the Good Templars, and other societies of a similar nature, have been persistent and untiring in their efforts to further the interests of the cause. Through the instrumentality of these associations temperance books, tracts, and papers have been scattered like leaves of the forest through every State in the Union, and temperance lecturers have traversed the land in all directions. As a result of these earnest endeavors to promote the temperance cause, public opinion is steadily but surely being revolutionized, and the tide is rapidly turning in favor of temperance. The noble example of Mrs. Hayes in the White House, and the strenuous efforts that are being made by Postmaster General Maynard to banish drinking saloons from the immediate vicinity of the Government buildings at Washington, are significant signs of a revolution of public sentiment in high places in regard to temperance, and are full of encouragement to those who have been faithfully fighting its battles against fearful odds.

The grandest achievement of the past year was the adoption by the State of Kansas, at the recent election, by about ten thousand majority, of a constitutional amendment forever prohibiting the manufacture and sale of all alcoholic liquors within its borders, excepting for mechanical and medicinal purposes. This is the beginning of the end. Constitutional prohibition is destined to be the watch-word of temperance reform throughout the whole country. The success achieved in Kansas has kindled anew the enthusiasm of the friends of temperance, and a call has been issued for a National Temperance Convention to meet at Saratoga Springs, June 21st, 1881, to consist of delegates from all the various temperance organizations of the country, in order to secure concerted action on the part of all workers in the temperance cause. The example of Kansas cannot fail to be productive of good results. Already in Pennsylvania, North Carolina, Nebraska, Missouri, Tennessee, and West Virginia, efforts are being made to bring a similar constitu-

tional provision before the people for adoption. If only the Christian and moral elements of society would combine their efforts and use all the legitimate means at their command, such constitutional amendments might be speedily adopted and enforced in every State in the Union. Let the advocates of temperance redouble their efforts, and before the close of the nineteenth century our country will be redeemed from the withering blight of intemperance, and thereby the cause of temperance will receive a grand impetus throughout the world.

EDITOR'S TABLE.

Questions on a variety of subjects find their way to our table every month, from all parts of the United States, and from beyond the seas. If answered intelligently, they cannot fail to be of great value to our readers. Among ancient philosophers this was the favorite method of teaching. It was our Savior's custom—and even in our day it is the popular method in all institutions of learning. We invite members of the C. L. S. C. and others to send us their difficult questions, and when gathered around their table for the monthly chat, the editors of THE CHAUTAUQUAN will give every question careful attention, and prepare answers to fill the space reserved for their "Table."

Q. "What is meant by 'cuneiform scholar?'" A. We use the words "cuneiform scholar," in the same sense that we say "Greek scholar," or "Latin scholar," meaning one learned in the cuneiform (wedge-shaped) writing found on ancient oriental monuments. This writing seems to have begun about 2,000 B. C., and to have ceased about the time of Alexander. Scholars are still hard at work upon it, and much valuable light by means of it has already been turned upon ancient history.

Q. "What is the meaning of '*cir.* B. C. 408?'" A. Question already answered on page 137, December number of THE CHAUTAUQUAN.

Q. "Are any powers of the mind disciplined and strengthened by language-study except the memory?" A. Yes, decidedly. The study of all languages, our own not less than any other, strengthens every faculty and function of the mind. We not only exercise memory, but we analyze, synthetize, classify, compare, infer, &c.—even patience sometimes has "her perfect work." The wisdom of a language school in the Chautauqua plan for popular culture is found in the nature of language-study itself.

Q. "I become greatly discouraged in my history reading because I cannot remember the dates; are there any methods by which the infirmity can be helped if not removed?" A. Memory may be improved, not by arbitrary mnemonic systems, which are more difficult to remember than the thing itself, but by applying the principle of association to things naturally associated. To many persons to remember many dates is a thing most difficult if not impossible. Dates are not all-important though they help to arrange and classify our knowledge. Learn fewer dates and group historical facts about approximate points of time. If we can't do up our knowledge in packages of a single year, then in decades; if not in decades, then in centuries; if not in centuries, then in sections of two or three centuries, and so on. In general terms, memory is faithful as we confide in and trust it. Isaac Newton said that power of *re*tention is the result of close *at*tention.

Q. "When Cyrus the Great laid offerings before the Delphian Oracle for propitiation, vessels of gold and silver were burnt in the fire. He then ordered the molten metal to be taken out of the ashes, part of it to be cast into the form of a lion, and the rest into plates for the lion to stand on. It was then set up within the precincts of the temple. Of what signification was the lion in that instance? Had it any reference to the lion of the tribe of Judah? Or the insignia used as coats-of-arms by so many emperors and kings since?—[reference to the Lord Jesus Christ.] A. We cannot reply with positiveness, but express our belief that human pride and vain-glory have had a great deal more to do with the statuary of ancient kings, and with the insignia of modern monarchs and nobles than any prospective or retrospective faith in Christ. The lion has almost always been regarded as the king of beasts, and the wearer of such a device on his shield assumed that he himself was one of the kings of men.

Q. (1) "Why do you in this age of the world write female when you mean woman? (2) Is it not asking too much of the C. L. S. C. to submit to such a use of the word in our required reading?" A. (1) The writer of the History of the World uses just such language as best expresses his meaning. Our friend does not point out the passage or passages in which the offensive word occurs. If he had done so, a more satisfactory answer might be afforded. Does he, as an M. D., believe that "in this age of the world," the word "female" ought not to be used in connection with the gentler sex? If so, he is not in accord with the writers of medical books. (2) The C. L. S. C. is not asked "to submit" to the use of any word not sanctioned by judicious literary criticism.

Q. We have had some discussion in our Local Circle as to the meaning of the terms "classic" and "romantic." Will you give us the meaning of these terms in THE CHAUTAUQUAN? A. Goethe, in his conversations, says, "I call the classic, *healthy*, the romantic, *sickly*. In this sense the Nibelungen Lied, is as classic as the Iliad, for both are vigorous and healthy. Most modern productions are romantic, not because they are new, but because they are weak, morbid and sickly, and the antique is classic, not because it is old but because it is strong, fresh, joyous and healthy." If we distinguish classic and romantic by these qualities, it will be easy to see our way clearly.

Q. "Why is it that in Alaska there is one day in summer on which the sun does not set, and one in winter when it does not rise?" A. The axis of the earth inclines to its orbit 23 deg. 28 min. This causes the direct rays of the sun to fall north of the equator during one half of the year, and south during the other. These rays reach at their extreme limits 23 deg. 28 min. beyond the north pole and to the same distance beyond the south pole. When this limit is reached, the sun instantly begins its apparent return. Thus during one day of each year every point on north latitude 66 deg. 32 min. will receive the sun's rays, and for one entire day the sun will disappear.

Q. "To what extent should I rely upon my own judgment, and how far should I depend upon the advice of my friends, etc., etc.?" A. This is a delicate question, though it is often asked, especially by young people. One of our American humorists says, "If you are going to give advice, first find out what kind the man wants." There is profound philosophy in this suggestion. The safest rule, however, is for a person to both give and take advice sparingly. We think it is Addison, who has written, "I have known several odd cases of this nature—Hipparchus was going to marry a common woman, but being resolved to do nothing without the advice of his friend Philander, he consulted him upon the occasion. Philander told him his mind freely, and represented his mistress to him in such strong colors, that the next morning he received a challenge for his pains, and before twelve o'clock was run through the body by the man who had asked his advice. Celia was more prudent on the like occasion. She desired Leonilla to give her opinion freely up-

on a young fellow who made his addresses to her. Leonilla, to oblige her, told her with great frankness, that she looked upon him as the most worthless——. Celia, foreseeing what a character she was to expect, begged her not to go on, for she had been privately married to him above a fortnight."

EDITOR'S NOTE BOOK.

A glance at our Note Book each month before THE CHAUTAUQUAN goes to press, is very suggestive. In it we find a number of items and inspiring thoughts that we have gleaned from our numerous letters, and gathered from our conversations with Chautauquans, that will be of so much value to our readers, and so helpful to our work, that we have decided to transcribe them from our Note Book to THE CHAUTAUQUAN. This is a deparement, too, where "Local Circles" may be represented in short, spicy reports of their best meetings, or a synopsis of a valuable lecture that has been delivered at a monthly meeting. We invite the president or secretary of each Local Circle to keep an eye on the proceedings and forward to us notes for publication—THE CHAUTAUQUAN is your magazine, and we shall do our best to give you space to represent your work.

Not a letter nor a dot in THE CHAUTAUQUAN for February but is from the unworn face of type bran-new. Our readers will rejoice with us at all improvements, none the less when in the Publisher's department.

Warm expressions of satisfaction and approval come to us for the question-and-answer exercise furnished by General Secretary A. M. Martin. Many have expressed the desire that they be extended to Church History. It shall be done. Church History in this form will appear in due time.

The new and improved arrangement of matter in the Editor's department, beginning with this number, must commend itself to all. This is a natural, logical division, and will prove a great convenience to every reader of THE CHAUTAUQUAN. No excuse now for not knowing just where to look for anything the editor has been saying.

It is expected as we approach the opening of the Chautauqua School of Languages of 1881, that articles from the professors in the respective departments will appear in THE CHAUTAUQUAN. The original intention to furnish through these teachers, to language-students, suggestions and discussions of methods &c., has not been abandoned, but will be carried out the earliest possible.

Prof. Geo. L. White, manager of the Jubilee Singers, who was seriously injured by a fall at Chautauqua last August, has so far recovered that he is able to move about on crutches, and to ride out in a sleigh. He is still at Fredonia, N. Y., but he hopes to soon be able to take charge of these popular singers in their journeys over the country. When he does this, we predict that his management will be very successful, as it has been in the past.

The Trustees of the Chautauqua Assembly, of which body Lewis Miller, Esq., of Akron, O., is President, held their annual meeting at the Forest City House in Cleveland, O., the 18th and 19th of January. It was too late to get a report of the proceedings in this number of THE CHAUTAUQUAN. Dr. Vincent was present and gave the outline of his plan for the "Assembly" of 1881. We shall publish a report of the doings of this body in the March number of THE CHAUTAUQUAN.

Rev. Dr. Potts, of Toronto, writes to Dr. Vincent as follows: "There is a young man sitting in my study while I write who has given me an incident which has induced me to write these few lines. His brother in a city of this province gave no evidence of a desire for study, and worked in his father's foundry. After much persuasion he was induced to read upon the C. L. S. C. course, and the effect was such that he asked his father to let him go to college. He is now passing through the university course." So much for the ministry of the C. L. S. C in the cause of education.

"Hypatia," from the pen of Charles Kingsley, is a romance of great power. It is both historical and philosophical. The author does not simply gather up historical records; he makes himself and the reader *live* in the past. He shows us human nature in an earlier dress. It is a most excellent selection to combine with the weightier reading of the Church History course. A correspondent writes of it as follows: "The Church Historian of Halle University remarked to his class, in my hearing, that the best and most accurate picture of life in the fifth century which he knew of was given by the Englishman, Kingsley, in his historical romance, Hypatia."

We recognize with pleasure the courtesy and kindness of Dr. E. F. Burr in consenting to the use of "Theism as a Scientific Hypothesis," published for the C. L. S. C. in the present number of THE CHAUTAUQUAN. This lecture is No. VIII from the author's book, "Pater Mundi." It is but one of the series comprising that volume, and constituting a noble, mighty defense of both Theism and Christianity. No writer of modern times has dealt Atheism harder blows than has Dr. Burr. His style is always vigorous, clear, magnetic. Not a book has come from his pen, "Ecce Cœlum," "Ad Fidum" as well as "Pater Mundi," but has received the highest praise from the general reader as well as the advanced thinker.

Some of our readers may remember a statement made at one of the round-table conferences at Chautauqua, about a young woman—a servant girl—who joined the C. L. S. C., in Ohio. From a gentleman at whose house she worked I have received the following:—"Miss —— is now attending the —— Normal school at ——. She lived with us all of last year; was a faithful servant, conscientiously doing our housework. She was a diligent student; took a few weeks of private lessons; pushed on with the Circle work as well as she could; taught a class in the Sabbath-school; saved $75 of her earnings, borrowed $50 more, and is now succeeding admirably in her school work, and hopes to be sufficiently advanced before long to teach a small school. She will complete the Circle course. The C. L. S. C. gave her the first impetus in her present course."

With this number members of the C. L. S. C. will complete the reading from the pen of Prof. George Rawlinson. The author of the "Origin of Nations," ranks among the first of English scholars. He was educated at Oxford, chosen a Fellow of Exeter College, and appointed Bampton lecturer in 1859. No more reliable authority on the subjects he has treated may be found in the English language. His "Origin of Nations," in the C. L. S. C. course side by side with the first part of Dr. Wheatley's "History of the World," places a double chart in the hands of the student. We trust he has been read with due care. Back among the beginnings which he discusses are found the premises from which many of the conclusions of modern history are deduced. Not a historic rill of the past which has not flowed into the present. Our ideas of those early periods cannot be too clear and exact.

We have printed 15,000 copies of every number of THE CHAUTAUQUAN from the beginning of the volume. Some

of our friends smiled a skeptical smile when we began with these figures, but at this writing, three numbers, the October, November and December are out of print. Subscriptions in such large numbers have continued to pour in upon us, that already we have reprinted the "*Required Readings*" of the C. L. S. C. course for October and November, and those for December are now in the hands of the printer and will be issued in a few days. Thus we shall be able to continue to supply the course for the year. This is a good indication of the numerical strength of the C. L. S. C. Our readers may *guess* how many our list numbers beyond 15,000. We thank our friends for their kind words concerning THE CHAUTAUQUAN. When men like Edward Everett Hale, Dr. Vincent, Bishops Foster, Warren, and Haven, Prof. Eaton, Dr. Buckley, and Mr. H. K. Carroll, with many others, send us their words of appreciation, we do not stop to feel proud, but buckle on the armor and start afresh to make THE CHAUTAUQUAN still more valuable and worthy of the friendship of the best people and the best critics in the land.

The first of a series of free lectures under the auspices of the Pittsburgh branch of the C. L. S. C., was delivered in that city on Thursday evening, December 16th, 1880, by Rev. Dr. S. F. Scovel, upon the subject, "Twelve Tangets of the Chautauqua Literary and Scientific Circle." The speaker in his address spoke of twelve points where the work of this organization touches life and character, illustrating each point by a unique and suggestive reading of the letters, "C. L. S. C." We give the points and the readings below, which are but a slight index of the instructive character of the lecture itself: First, it emphasizes culture, C. L. S. C. reading, "Come Let us Seek Culture." Second, it uses abundant natural material, and thus "Cultivates Literary and Scientific Curiosity." Third, it carries on a curriculum for the well educated and "Completes the Long ago Students' Curriculum." Fourth, it relieves the cases of arrested development, and helps the half educated; the C. L. S. C. thus "Comforts the Late Students Class." Fifth, it employs the force of association, and C. L. S. C. may therefore mean "CoaLeSCe." Sixth, it incidentally serves to develop rare minds and peculiar gifts which have hitherto failed of early development by ordinary means, and "Compels Latent Susceptibilities to Come out." Seventh, it teaches and stimulates taste, and therefore "Conduces largely to æSthetic Cultivation." Eighth, it touches us at the points of temptation to reading and recreation that are useless and harmful; the C. L. S. C. thus "Circumvents Low Stories Completely." Ninth, it furnishes a way in which our teachers in secular schools and Sunday-schools may be always learning something fresh, stimulating and suggestive in their own work. In this connection C. L. S. C. might read, "Chautauqua Laid up Stores for Children." Tenth, it is a system thoroughly in sympathy with our Democratic and Republican ideas; "Chautauqua Learning Sinking Caste." Eleventh, it aids in the preparation for the common duties of life, and therefore "Conducts Life in Sensible Channels." Twelfth, it is a force in character making, and "Culminates in Leading Souls to Christ."

Not only does any suspicion of an underlying design spoil the brightest glance and neatest repartee; not only does it go against the grain to be caressing, or even genial, on compulsion; but also it must be remembered that those bent on producing a favorable impression, or absorbed in watching the impression they produce, are not likely to have so much room left in their hearts and minds for the better, simpler emotions, the more worthy interests which could alone make them really admirable or winning.—*Mrs. Francis G. Faithful.*

MEMORIAL DAYS.

Twelve days are set apart as days of especial interest to every member of the C. L. S. C., and as days of devout prayer for the furtherance of the objects of this society. On these days all members are urgently invited to read the literary or scriptural selections indicated, to collect some facts about the authors whose birthdays are thus commemorated, and to invoke the blessing of our Heavenly Father upon this attempt to exalt His word, and to understand and rejoice in His works. The selections to be read on the Memorial Days are published (by Philips & Hunt, and by Hitchcock & Walden) in a small volume—Chautauqua Text-Book, No. 7, "Memorial Days." Price, 10 cents.

1. *Opening Day.* October 1.

[The chapel bell at Chautauqua will ring at noon, October 1, and on every other "Memorial Day" during the year. Wherever they may be, true Chautauquans can hear its echoes].

2. *Bryant's Day.* November 3.
3. *Special Sunday.* November, second Sunday.
4. *Milton's Day.* December 9.
5. *College Day.* January, last Thursday.
6. *Special Sunday.* February, second Sunday.
7. *Shakspeare's Day.* April 23.
8. *Addison's Day.* May 1.
9. *Special Sunday.* May, second Sunday.
10. *Special Sunday.* July, second Sunday.
11. *Inauguration Day.* August, first Saturday after first Tuesday. Anniversary of C. L. S. C., at Chautauqua.
12. *St. Paul's Day.* August, second Saturday after first Tuesday. Anniversary of the dedication of St. Paul's Grove at Chautauqua.

The treasury of the United States is literally brimming over with wealth. The surplus this year amounts to £13,176,000 sterling, an amount of which Mr. Gladstone has never ventured to dream, and which all other financiers in Europe must regard with envious despair. The whole of this vast surplus—nearly the revenue of Prussia when she advanced to the headship of Europe—and a million and a half besides, has been applied to the reduction of debt. The American people, half-ruined by their Civil War, insisted on paying off instead of bearing their debt, and amid the most terrible temptations adhered to that resolve with an unswerving persistence which throws a new light upon the future of democracy.—*The London Spectator.*

"I wonder, when we go to heaven,
If there a record will be given
Of all our thoughts and all our ways,
Writ on the face of yesterdays?

"If so, I pray God grant to me
That mine a noble life may be;
For then I'll greet with joyous gaze
The dear, lost face of—yesterdays."

Chambers' Journal.

Miss Mary A. Lathbury, who is now in Boston, Mass., in a letter says: "Edward Everett Hale, whom I see very often, is greatly interested in our work, and a great admirer of *The Chautauquan.* He gave it the strongest and most hearty approval I have heard from any source at a meeting of the Suffolk Sunday-school Teacher's Association here two weeks ago. He says he is amazed at its scope, and glad that it dares to undertake so much."

The Rev. J. H. Vincent, D. D., says: "I am greatly delighted with the December number of *The Chautauquan.*"